

## **Appendix C**

### **Agency Correspondence**



Deval L. Patrick  
GOVERNOR

Richard K. Sullivan Jr.  
SECRETARY

*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Tel: (617) 626-1000  
Fax: (617) 626-1181  
<http://www.mass.gov/envir>

December 27, 2013

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS  
ON THE  
EXPANDED ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Silver Line Gateway  
PROJECT MUNICIPALITY : Chelsea and Boston  
PROJECT WATERSHED : Boston Harbor  
EEA NUMBER : 15124  
PROJECT PROPONENT : Massachusetts Department of Transportation (MassDOT)  
DATE NOTICED IN MONITOR : November 20, 2013

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **requires** the preparation of a mandatory Environmental Impact Report (EIR). Pursuant to 301 CMR 11.11, MassDOT has requested that I allow the submission of a Single EIR, rather than a Draft and Final EIR. MassDOT should submit a Single EIR in accordance with the limited Scope contained in this Certificate.

Project Description

The project entails the extension of the Silver Line Bus Rapid Transit (BRT) service from South Station in Boston to East Boston and Chelsea along a corridor covering 24.94 acres. The project will require new construction in Chelsea extending from the Massachusetts Port Authority employee parking lot to Central Avenue and Eastern Avenue and ending at the Mystic Mall. No construction is proposed in East Boston, where the bus service will utilize existing transportation infrastructure. The project proposes to replace the Washington Street Bridge in Chelsea, relocate the Chelsea commuter rail station, and provide a shared use path and accessibility for the disabled. The proposed Silver Line Gateway route is approximately five miles long and will require eight to ten dual-mode (diesel/electric) articulated buses that will operate in mixed traffic through East Boston to Eastern Avenue in Chelsea. The route would

begin at South Station in Boston, stopping at all of the existing Silver Line stations in the Seaport District, use the Ted Williams Tunnel and stop at the Airport Blue Line Station, use the new Coughlin Bypass Road, and then cross into Chelsea via the new Chelsea Street Bridge. West of Eastern Avenue, a new busway will be constructed along MassDOT-owned right-of-way (ROW), the former Grand Junction Railway, to the Mystic Mall with new stations to be constructed at Eastern Avenue, the Box District, downtown Chelsea, and the Mystic Mall. The project will be constructed in two phases. Phase 1 will include the construction of the busway, three of the four proposed BRT stations, and replacement of the Washington Street Bridge. Phase 2 will include the construction of the downtown Chelsea BRT station, the new commuter rail station and the shared-use path, and the demolition of the existing commuter rail station. The project is included in the Boston Metropolitan Planning Organization's 2014 Transportation Improvement Program (TIP).

As part of the project, the Executive Office of Energy and Environmental Affairs (EEA) and the City of Chelsea propose to construct a shared-use path along a section of the former Grand Junction Railroad ROW with an appropriation under the Gateway Cities Parks Program, the Governor's urban parks initiative. The goal of this component of the project is to provide a linear trail from the Chelsea River waterfront to downtown Chelsea that will serve as both a transportation alternative and a recreational facility. The path will parallel the busway where it can be accommodated within and the ROW. From the downtown area, the path will utilize existing city streets. It will connect to other regional path systems including the existing East Boston Greenway, the Northern Strand Trail, and the Malden River trail system. MassDOT will coordinate with the City and EEA to ensure that the design of the Silver Line Gateway accommodates the implementation of the shared-use path.

Potential environmental impacts are associated with the creation of 4.85 acres of new impervious area, including 3.6 acres for the busway, 0.4 acres for the relocated commuter rail station, and 0.85 acres for the shared-use path and off-street elements; and 13,798 sf of alteration to Isolated Vegetated Wetlands (IVW).

#### Permitting and Jurisdiction

The project is undergoing MEPA review and requires preparation of a mandatory Environmental Impact Report (EIR) pursuant to 301 CMR 11.03(6)(a)(5) and (3)(b)(1)(d) because it requires a State Agency Action, entails the construction of a new rapid transit line along a new, unused or abandoned ROW for transportation of passengers, and will alter 5,000 or more square feet (sf) of IVW. The project will require a 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP), Federal Consistency Review by the Office of Coastal Zone Management, and review by the Massachusetts Historical Commission. The project may require a Section 8(m) and Sewer Use Discharge Permits from the Massachusetts Water Resources Authority (MWRA).

The project will also require a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities from the U.S. Environmental Protection Agency (EPA) and a Section 404 General Permit from the U.S. Army Corps of Engineers. The

Chelsea Conservation Commission has issued a Negative Determination of Applicability for the project.

Because the Proponent is a State Agency and the project will be constructed with Financial Assistance from the Commonwealth, MEPA jurisdiction is broad in scope and extends to any aspect of the project that may, directly or indirectly, cause Damage to the Environment as defined in the MEPA regulations.

Single EIR Request

MassDOT has requested that I allow a Single EIR pursuant to 301 CMR 11.05(7). Consistent with this request, MassDOT submitted an Expanded Environmental Notification Form (EENF) that was subject to an extended comment period of 30 days. The EENF included an alternatives analysis that was based on a comprehensive public outreach program, including four public meetings. Three separate project alternatives were identified in addition to the No Build Alternative. All three share a common routing from South Station through the Seaport District and East Boston utilizing exiting transportation facilities (South Boston Piers Transitway, Ted Williams Tunnel, MBTA Blue Line Airport Station, Coughlin Bypass Road, and the Chelsea Street Bridge). Alternative 1 (the Preferred Alternative) would end at the Mystic Mall, Alternative 2 would end at Bellingham Square partially operating on city streets, and Alternative 3 would primarily operate on existing city streets. Alternative 1 was selected as the Preferred Alternative based on public input and the travel time benefits associated with a dedicated busway.

As described in the EENF, the Silver Line Gateway project will enhance livability and promote economic development in Chelsea and East Boston by improving transit access to transit services, relieving overcrowding on existing bus routes, and relieving traffic congestion. It will include the modernization of the Chelsea Commuter Rail Station, which will be relocated to Everett Avenue as part of a new multi-modal Silver Line/Commuter Rail Station that will be fully accessible and compliant with the Americans with Disabilities Act. Additionally, the project will replace the functionally obsolete Washington Avenue Bridge, utilize abandoned railroad ROW (thereby preserving local roadway capacity), and accommodate a shared-use path (thereby encouraging walking and bicycling). The project will leverage many recent public investments such as the new Chelsea Street Bridge, the Coughlin Bypass Road in East Boston, the Airport Blue Line Station, and the purchase by MassDOT of the former Grand Junction Railroad ROW through the center of Chelsea. The project also advances a key component of the Urban Ring (EEA #12565), the goal of which is to provide circumferential transit service around the urban area of Boston. These improvements advance MassDOT's GreenDOT initiative and mode shift goals, and by converting more trips to transit, walking and bicycling, will help to reduce regional greenhouse gas (GHG) emissions. Additionally, the project will serve Environmental Justice (EJ) populations by improving their accessibility to jobs in downtown Boston and the Seaport District.

I note the comments submitted in support of the project by the City of Chelsea, A Better City (ABC), and the Metropolitan Area Planning Council (MAPC). Based on review of the EENF and consultation with State Agencies, I hereby allow MassDOT to submit a Single EIR.

## SCOPE

### General

The Proponent should prepare the Single EIR in accordance with the general guidance for outline and content found in Section 11.07 of the MEPA regulations, as modified by this Scope. This Scope is limited to additional information on the on the project, provision of a wetlands replication plan, stormwater management, greenhouse gas analysis, and construction period impacts.

### Project Description

The Single EIR should include a thorough description of the entire project and all project elements and construction phases, in clear non-technical language. The Single EIR should clearly describe any changes to the project since the filing of the ENF. The Single EIR should include an existing conditions plan that clearly locates and delineates project elements, wetland resource areas, and adjacent land uses. The Single EIR should include proposed conditions plans illustrating proposed cross-sections and elevations, structures, stormwater management systems, and utility connections associated with the project.

### Wetlands

The project will require a 401 WQC from MassDEP for the permanent alteration of 13,798 sf of IVW along the project corridor within the abandoned ROW. The EENF demonstrates that these impacts cannot be avoided if the project is to be located in the former railroad ROW, as compared to a project alternative that would operate on existing city streets. An alternatives analysis will be required as part of the 401 WQC process, as will wetlands replication. The Single EIR should present a replication plan along with a wetlands evaluation, as requested by MassDEP in its comments.

### Stormwater Management

The EENF provided a conceptual description of the stormwater management plan for the project. The Single EIR should evaluate stormwater runoff impacts during construction and post-construction in greater detail, including plans showing the design of the post-construction drainage system designed in compliance with the stormwater management regulations. The EENF indicates that most of the project will be new development; therefore, MassDOT must demonstrate in the Single EIR that the relevant sections of the wetlands regulations will be fully met. The Single EIR should also demonstrate that the pre-treatment and structural stormwater Best Management Practices (BMPs) will be met to the maximum extent practicable for the redevelopment portions of the project, as directed in MassDEP's comments.

Additionally, the Single EIR should explain how water quality and quantity impacts would be controlled in accordance with the standards in the stormwater management regulations, including source controls, pollution prevention measures, and erosion and sedimentation controls during construction. Overall, the Single EIR should demonstrate through calculations,



stormwater system design plans, BMP designs and any supporting information, that the stormwater system will provide adequate protection for wetland resources in conformance with the stormwater regulations and the NPDES permit. MassDOT should also consider implementation of low impact development (LID) techniques and integrated management practices (IMP), as noted in MassDEP's comments.

#### Potential Infrastructure Impacts

The MWRA prohibits the discharge of groundwater to the sanitary sewer system. Because the project would have access to storm drains, the discharge of groundwater to the sanitary sewer system associated with this project is prohibited. The Single EIR should discuss whether MassDOT intends to install gas/oil separators in any vehicle maintenance, storage or wash buildings that may be planned for the project. The Single EIR should also discuss whether the project would impact the MWRA's water and wastewater systems in the sections specified in its comments, and if so, disclose whether the project would require an 8(m) Permit.

#### Greenhouse Gas Emissions

This project is subject to review under the May 5, 2010 MEPA Greenhouse Gas Emission Policy and Protocol (GHG Policy). As a transit project intended to increase ridership and provide alternatives to driving, it may qualify for the de minimis exemption from the GHG Policy. The Single EIR should include a discussion of potential GHG emissions associated with the project to support use of the de minimis exemption. The GHG Policy requires that proponents quantify the project's GHG emissions and identify measures to avoid, minimize and mitigate these emissions. The EENF includes three alternatives for the project and indicates that Alternative 1 (Busway to Mystic Mall) will provide the greatest air quality improvements on a regional basis, as compared to the other two alternatives considered, although the difference in air quality improvements between the three project alternatives is relatively small. The project will require the operation of eight to ten dual-mode articulated buses. The Single EIR should quantify the additional GHG emissions that will be generated by the operation of these buses, which are expected to reduce traffic congestion, as compared to the No Build condition. The Single EIR should also address measures to reduce emissions associated with construction and operation, such as reducing idling of construction equipment or using alternative fuels to power construction vehicles. I encourage MassDOT to consult with the MEPA Office and the Department of Energy Resources regarding the GHG analysis prior to submission of the Single EIR.

#### Construction Period Impacts

The Single EIR should include a draft Construction Management Plan (CMP) describing project activities and their schedule and sequencing, site access and truck routing, and BMPs that will be used to avoid and minimize adverse environmental impacts. The CMP should address potential construction period impacts (including but not limited to land disturbance, noise, vibration, dust, odor, nuisance, vehicle emissions, construction debris, and construction-related traffic) and analyze and outline feasible measures that can be implemented to eliminate or minimize these impacts. The Single EIR should outline potential measures to address materials

management during the construction period. The Single EIR should discuss measures proposed to protect wetland resource areas during construction, and the CMP should include an erosion control component to address protection of water quality and wetlands resources. The project must comply with MassDEP's Solid Waste and Air Quality Control regulations during construction. MassDOT should note MassDEP's detailed comments regarding compliance with the Massachusetts Contingency Plan (MCP) and recycling of construction and demolition waste.

In accordance with MassDOT's GreenDOT Policy Directive, contractors will be required to install emission control devices on all off-road vehicles to reduce emissions of volatile organic compounds (VOCs), carbon monoxide (CO) and particulate matter (PM) from diesel-powered equipment. Off-road vehicles are required to use ultra-low sulfur diesel fuel (ULSD).

#### Mitigation and Section 61 Findings

The Single EIR should include a separate chapter on mitigation measures, which should include a summary table of all mitigation commitments as well as detailed draft Section 61 Findings for all State Agency Permits. The Section 61 Findings should describe proposed mitigation measures, contain clear commitments to mitigation and a schedule for implementation, based on the construction phases of the project, estimate the individual cost of each proposed measure, and identify parties responsible for funding and implementing the mitigation measures. The proposed Section 61 Findings will serve as the primary template for permit conditions.

#### Responses to Comments

The Single EIR should contain a copy of this Certificate and a copy of each comment letter received on the EENF. In order to ensure that the issues raised by commenters are addressed, the Single EIR should include a response to comments received to the extent they are within MEPA jurisdiction. This directive is not intended to and shall not be construed to enlarge the scope of the Single EIR beyond what has been expressly identified in this Certificate. I recommend that the Proponent use either an indexed response to comments format, or a direct narrative response.

#### Circulation

In accordance with Section 11.16 of the MEPA Regulations and as modified by this Certificate, the Proponent should circulate a hard copy of the Single EIR to each State Agency from which the Proponent will seek permits. The Proponent must circulate a copy of the Single EIR to all other parties that submitted individual written comments. In accordance with 301 CMR 11.16(5), the Proponent may circulate copies of the Single EIR to these other parties in CD-ROM format or by directing commenters to a project website address. However, the Proponent should make available a reasonable number of hard copies to accommodate those without convenient access to a computer and distribute these upon request on a first-come, first-served basis. The Proponent should send correspondence accompanying the CD-ROM or website address indicating that hard copies are available upon request, noting relevant comment deadlines, and appropriate addresses for submission of comments. A CD-ROM copy of the

EEA# 15124


EENF Certificate

December 27, 2013

filing should also be provided to the MEPA Office. Copies of the Single EIR should be made available for review at the Chelsea and East Boston public libraries.

December 27, 2013

Date

  
Richard K. Sullivan Jr.

Comments received:

|            |  |
|------------|--|
| 12/16/2013 | WalkBoston   |
| 12/19/2013 | George Bacon   |
| 12/20/2013 | Massachusetts Department of Environmental Protection |
| 12/20/2013 | Massachusetts Water Resources Authority              |
| 12/20/2013 | Metropolitan Area Planning Council                   |
| 12/20/2013 | A Better City (ABC)                                  |
| 12/23/2013 | Chelsea Department of Planning & Development         |

RKS/RAB/rab





**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**A. General Information**

**Important:**

When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



From:

Chelsea  
Conservation Commission

To: Applicant

Susan McArthur, MaDOT  
Name  
10 Park Plaza, Suite 4260  
Mailing Address

Boston MA 02116  
City/Town State Zip Code

Property Owner (if different from applicant):

Name  
Mailing Address  
City/Town State Zip Code

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

|                            |              |
|----------------------------|--------------|
| Figure 1 Project Locus Map | October 2013 |
| Title                      | Date         |
| Figure 2 Delineation Map   | October 2013 |
| Title                      | Date         |
| Figure 3 Topographic Map   | October 2013 |
| Title                      | Date         |

2. Date Request Filed:

October 11, 2013

**B. Determination**

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

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Project Location:

Former Grand Junction Rail ROW, Eastern Ave to  
Rockport Commuter Rail Line  
Maps 22, 23, 31 and 40  
Assessors Map/Plat Number

Chelsea  
City/Town

Parcel/Lot Number



**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**B. Determination (cont.)**

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

**Positive Determination**

Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) or Order of Resource Area Delineation (issued following submittal of Simplified Review ANRAD) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent or ANRAD Simplified Review (if work is limited to the Buffer Zone).

☐ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

Name

Ordinance or Bylaw Citation


**Massachusetts Department of Environmental Protection**

Bureau of Resource Protection - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**B. Determination (cont.)**

- ☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:

- ☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.58(4)c. for more information about the scope of alternatives requirements):

- ☐ Alternatives limited to the lot on which the project is located.
- ☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.
- ☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.
- ☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

**Negative Determination**

Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission.

Requirements for requests for Superseding Determinations are listed at the end of this document.

- ☒ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.
- ☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.
- ☐ 3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

- ☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.



**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

**WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

**B. Determination (cont.)**

- ☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statutory/regulatory provisions)

- ☐ 6. The area and/or work described in the Request is not subject to review and approval by:

Chelsea

Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

Name

Ordinance or Bylaw Citation

**C. Authorization**

This Determination is issued to the applicant and delivered as follows:

☒ by hand delivery on

☐ by certified mail, return receipt requested on

December 3, 2013

Date

Date

This Determination is valid for **three years** from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DEP Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html>) and the property owner (if different from the applicant).

Signatures:

*[Handwritten signatures]*  
Judith Dyer

December 3, 2013

Date



**Massachusetts Department of Environmental Protection**  
Bureau of Resource Protection - Wetlands

## **WPA Form 2 – Determination of Applicability**

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

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### **D. Appeals**

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see <http://www.mass.gov/eea/agencies/massdep/about/contacts/find-the-massdep-regional-office-for-your-city-or-town.html>) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.





Deval L. Patrick, Governor  
Richard A. Davey, Secretary & CEO  
Frank DePaola, Administrator



December 12, 2013

RE: Chelsea-Boston (604428)  
Silver Line Gateway Extension and Replacement of Bridge C-09-001,  
Washington Avenue over MBTA (604428)  
Section 106 Review: Project Notification Form

Ms. Brona Simon  
State Historic Preservation Officer  
Massachusetts Historical Commission  
220 Morrissey Boulevard  
Boston, MA 02125

Dear Ms. Simon:

Enclosed please find a Project Notification Form (PNF) for the above noted project in Chelsea and Boston. The project will require a U.S. Army Corps of Engineers' permit, the jurisdiction of which will cover the entire project area. MassDOT is submitting the enclosed project information for your review in compliance with the Corps' permit requirements pertaining to Section 106 of the National Historic Preservation Act of 1966, as amended.

MassDOT will submit copies of this PNF, locus map, and project plan to the Chelsea Historical Commission and the Boston Landmarks Commissions.

MassDOT submitted an Expanded Environmental Notification Form (EENF) for this project to the Executive Office of Energy and Environmental Affairs on November 20, 2013.

Please feel free to contact me at 857-368-8824 if you have any questions regarding this project.

Sincerely,

Jeffrey Shrimpton  
Cultural Resources Specialist  
Environmental Services

encs: PNF  
Locus map  
Project plan  
Aerial photos

c.c.: K. Adams, ACOE  
Chelsea Historical Commission  
Ellen Lipsey, Boston Landmarks Commission

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION

220 MORRISSEY BOULEVARD

BOSTON, MASS. 02125

617-727-8470, FAX: 617-727-5128

**PROJECT NOTIFICATION FORM**

**Project Name:** Silver Line Gateway Extension (MassDOT # 604428)  
**Location /Address:** Grand Junction Railroad ROW and MBTA Newburyport-Rockport rail line.  
**City/Town:** Chelsea and Boston  
**Project Proponent**  
**Name:** Massachusetts Department of Transportation  
**Address:** 10 Park Plaza  
**City/Town/Zip/Telephon** Boston, MA 02116 / T: 617-973-7497

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

| <u>Agency Name</u>      | <u>Type of License or funding (specify)</u>        |
|-------------------------|--|
| Army Corps of Engineers | General permit, Section 404 of the Clean Water Act |
| MassDOT                 | State Funding                                      |

**Project Description (narrative):**

The Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transit Authority (MBTA) are proposing to extend the Silver Line Gateway bus route from South Station in Boston to a new Chelsea Commuter Rail Station platform at Mystic Mall in Chelsea. In Boston, the Silver Line Gateway bus route will be located entirely on existing city streets and no new construction is required. The route begins at South Station in Boston and proceeds southeast across the Evelyn Moakley Bridge into South Boston. The route continues into the Seaport District in South Boston, north through the Ted Williams Tunnel to Logan Airport, and then north on Chelsea Street in East Boston to the Chelsea Street Bridge into Chelsea.

In Chelsea, the bus route will proceed in a northwesterly direction from the Chelsea Street Bridge to the Mystic Mall, a distance of approximately 1.2 miles. The Chelsea segment of the bus route will require construction of a new two-lane roadway on the abandoned and overgrown railroad bed along the Grand Junction railroad ROW (now owned by MassDOT) and then will continue onto the MBTA ROW, where the new roadway will be constructed on heavily disturbed ground parallel to the MBTA's active Newburyport-Rockport line. The new roadway will be separated from the active MBTA rail line by concrete barriers. The new roadway will terminate just west of Everett Avenue at a new bus turnaround on disturbed ground adjacent to the Mystic Mall parking lot. The new Silver Line Gateway roadway will be accessible only to Silver Line buses and emergency vehicles; no other motorized vehicular traffic will be permitted. A new shared use path will be constructed parallel to the new Silver Line Gateway roadway on existing ROW between Cottage Street and Chestnut Street.

A new Chelsea Commuter Rail Station platform will be constructed on both sides of the MBTA rail line adjacent to the new bus turnaround east of Everett Avenue near Market Basket. The existing rail station platform at Arlington St. in Chelsea will be removed. New passenger platforms also will be constructed along the new Silver Line bus route in Chelsea on the Grand Junction ROW and on the MBTA ROW.

The Washington Avenue Bridge (C-09-001) over the MBTA in Chelsea also will be replaced on the same alignment as part of this project. No roadway widening is proposed at the approaches to the bridge.

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

**Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.**

Yes. Bridge C-09-001, which carries Washington Avenue over the MBTA railroad, will be demolished and replaced with a new bridge constructed on the same alignment. The Washington Avenue Bridge is located ½ block north of the NR-listed Bellingham Square Historic District but is clearly outside of the district boundaries. The bridge is included in the MHC Inventory as CLS.920. The Washington Avenue Bridge is a mongrel two-span structure over the railroad consisting of a 1913 concrete slab superstructure at the south span and a 1960 steel stringer superstructure at the north span carried on a reinforced concrete south abutment, a reinforced concrete pier, and a late-19th century cut granite north abutment from an earlier bridge at this crossing. MHC, in a letter dated April 16, 1992, concurred with a finding by the Federal Highway Administration and MassHighway (now MassDOT) that the Washington Avenue Bridge is not eligible for listing in the National Register.

**Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation**

No.

**Does the project include new construction? If so, describe (attach plans and elevations if necessary).**

Yes. A new bridge will be constructed on the same alignment to replace the Washington Avenue Bridge (CLS.920). A new two-lane roadway will be constructed on the abandoned and overgrown rail bed along the Grand Junction railroad ROW (now owned by MassDOT) and then will continue onto the MBTA ROW, where the new roadway will be constructed on heavily disturbed ground parallel to the MBTA's active Newburyport-Rockport line.

**To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.**

A review of the National Register of Historic Places revealed that the project area in Boston is adjacent to the NR-listed South Station and the NR-listed Fort Point Channel Historic District. In Boston, the Silver Line Gateway bus route will be located entirely on existing city streets and no new construction is required adjacent to either South Station or the Fort Point Channel Historic District.

The project area in Chelsea is adjacent to the NR-listed Bellingham Square Historic District. The northerly boundary of the historic district between Washington Avenue and Broadway is defined by the MBTA railroad ROW. The new Silver Line Gateway roadway and the new shared use path in this vicinity will be constructed entirely within the MBTA ROW and outside the boundaries of the NR-listed Bellingham Square Historic District.

A review of the MHC Inventory of the Historic and Archaeological Assets of the Commonwealth revealed two inventoried properties located adjacent to the abandoned Grand Junction railroad ROW in Chelsea: the Russell Box Company-Chelsea Carton Company Building (CLS.608), constructed in 1911, and the Russell Box Company Storehouse (CLS.610), constructed in 1914. The address for both buildings is 88 Gerrish Avenue. A third inventoried building, the Russell Box Company Engine House (CLS.609), has been demolished. The two existing Russell Box Company buildings have been rehabilitated into multi-family housing. A site visit by MassDOT's Cultural Resources Unit (CRU) staff on September 24, 2013, revealed that extensive new multi-family residential development has been constructed on the 88 Gerrish Avenue property. The new Silver Line Gateway roadway and the new shared use path will be constructed entirely within the MBTA ROW adjacent to property associated with 88 Gerrish Avenue. MassDOT's Cultural Resources Unit (CRU) staff visited the project area on September 24, 2013, and determined that no other properties adjacent to the project area appear to be eligible for listing in the National Register.

## 950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

## APPENDIX A (continued)

A review of the MHC archaeological base maps revealed no recorded pre-contact or historic sites in the vicinity of the project area in Chelsea. Project impacts will be confined to the abandoned Grand Junction railroad bed, heavily graded track-side areas with steep side sloped within the active MBTA railroad ROW, paved areas at the Mystic Mall, and the Washington Avenue Bridge with no widening at the approaches. MassDOT's Archaeological Resources Supervisor, John Rempelakis, and other MassDOT Cultural Resources Unit (CRU) staff walked the entire ½ mile length of the Grand Junction ROW on September 24, 2013, and also viewed as much of the active MBTA ROW as feasible from overpasses and intersecting streets. CRU staff has determined that the entire project area has been heavily disturbed by the effects of past railroad, roadway, and bridge construction and high-density residential and commercial development and, thus, little or no archaeological potential may be ascribed to the project area. No visible remains or features of possible historical significance were encountered during the site visit.

## What is the total acreage of the project area?

|            |       |       |                       |       |       |
|------------|-------|-------|-----------------------|-------|-------|
| Woodland   | _____ | acres | Productive Resources: |       |       |
| Wetland    | _____ | acres | Agriculture           | _____ | acres |
| Floodplain | _____ | acres | Forestry              | _____ | acres |
| Open Space | _____ | acres | Mining/Extraction     | _____ | acres |
| Developed  | _____ | acres | Total Project Acreage | 25    | acres |

## What is the acreage of the proposed new construction?

\_\_\_\_\_ acres

## What is the present land use of the project area?

Railroad ROW, commercial development.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of person submitting this form:



Date:

12/13/2013

Name:

Jeffrey Shrimpton

Address:

10 Park Plaza

City/Town/Zip:

Boston, MA 02116

Telephone:

617-973-7497

## REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

7/1/93

950 CMR - 276



## CULTURAL RESOURCES PROJECT RECORD

|              |  |   |                                     |                      |                          |
|--------------|--|---|-------------------------------------|----------------------|--------------------------|
| City/Town    | Chelsea                                      | Project #   | 604428                              | Date Cleared         | 5/2/2012                 |
| Project Name | Bridge C-09-001, Washington Avenue over MBTA | Date Filed  | 5/2/2012                            | Finding Under Review | <input type="checkbox"/> |
|              |  | FHWA to MHC   |                                     |                      |                          |
| Project Type | Bridge Replacement                           | Early Coord. Letter Sent:                                 | <input checked="" type="checkbox"/> | Reviewer             | JPS                      |
| Review       | Section 106 (PA)                             | Comment Received:   |                                     | Consultant           |                          |
| Finding:     | Appendix 1                                   | <input type="checkbox"/> MHC <input type="checkbox"/> LHC |                                     |                      |                          |

**Comment**  
 Mongrel two-span bridge over railroad: 1913 concrete slab superstructure at south span and 1960 steel stringer superstructure at north span carried on reinforced concrete south abutment, reinforced concrete pier, and late-19th century cut granite north abutment from an earlier bridge at this crossing. Replacement bridge will be single-span prestressed concrete deck beam superstructure on new reinforced concrete south abutment and rehabilitated cut granite north abutment. Approach work includes reconstruction of Washington Avenue for 100' north and south of bridge and reconstruction of Heard Street for 150' from its intersection with Washington Avenue near the northwest corner of the bridge. Existing concrete sidewalks will be reconstructed within the project area. MHC concurred with FHWA and MassHighway finding of not eligible for Bridge C-09-001 in a letter dated April 16, 1992. Bridge is located 1/2 block north of NR-listed Bellingham Square Historic District but is clearly outside of the district boundaries. A review of the MHC archaeological base maps revealed no recorded pre-contact or historic sites within 1/2 mile of the project area. Project impacts will be confined to the existing bridge superstructure and substructure and to existing approach roadways and sidewalks. Thus, little or no archaeological potential can be ascribed to the project area based on the nature of the proposed work and the effects of past roadway, bridge, and railroad construction. LHC notification letter sent 3/29/2012; no response.

Determination based on: ☒ Scope of Work ☒ Plan ☒ Inventory ☐ Site Visit ☐ Archaeological Survey  
 Attach appropriate documentation for checked items

## Projects Requiring No Massachusetts SHPO Review

## Programmatic Agreement, Appendix 1 (check all that apply) :

- |  |   |
|--|---|
| <input type="checkbox"/> 1) Interstate bridge or roadway projects                                    | <input type="checkbox"/> 16) Bridge (less than 20' span)                  |
| <input type="checkbox"/> 2) Resurfacing, repair existing roadways                                    | * <input type="checkbox"/> 17) Highway safety improvement                 |
| * <input checked="" type="checkbox"/> 3) Reconstruction on existing roadway                          | <input type="checkbox"/> 18) Drainage system element                      |
| * <input type="checkbox"/> 4) Roadway geometrics, intersections                                      | * <input type="checkbox"/> 19) Traffic signal, safety improvement         |
| * <input checked="" type="checkbox"/> 5) Curbs and sidewalks   | * <input type="checkbox"/> 20) Intelligent Transportation System project  |
| <input type="checkbox"/> 6) Pavement markings, rumble strips, etc                                    | <input type="checkbox"/> 21) Rest area, maintenance facility              |
| <input type="checkbox"/> 7) Curbs, sidewalks (MAAB, ADA)   | * <input type="checkbox"/> 22) Bicycle, pedestrian lane, path or facility |
| * <input type="checkbox"/> 8) Removal of trees   | <input type="checkbox"/> 23) Lighting system                              |
| <input type="checkbox"/> 9) Landscaping  | <input type="checkbox"/> 24) Sign   |
| <input type="checkbox"/> 10) Utilities   | <input type="checkbox"/> 25) Hazardous waste                              |
| <input type="checkbox"/> 11) Railroad crossing   | <input type="checkbox"/> 26) Highway fencing                              |
| <input type="checkbox"/> 12) Stream stabilization and restoration                                    | <input type="checkbox"/> 27) Emergency repair                             |
| <input type="checkbox"/> 13) Wetland mitigation area   | <input type="checkbox"/> 28) Erosion control                              |
| * <input checked="" type="checkbox"/> 14) Bridge (NR "Not Eligible" or "Conditionally Not Eligible") | <input type="checkbox"/> 29) Noise barrier                                |
| * <input type="checkbox"/> 15) Bridge (concrete slab post 1900, steel stringer)                      | * National Register eligibility evaluation required                       |

-OR-

## No Historic Properties Affected

## Programmatic Agreement Stipulation V.B. (check one):

- ☐ No NR listed or -eligible properties within Area of Potential Effect  
☐ No effect on National Register listed or -eligible properties

Reviewer's Initials:





Deval L. Patrick, Governor  
Richard A. Davey, Secretary & CEO  
Frank DePaola, Administrator



December 24, 2013

RE: Chelsea-Boston (604428)  
Silver Line Gateway Extension and Replacement of Bridge C-09-001,  
Washington Avenue over MBTA (604428)  
Section 106 Review: Project Notification Form

Ms. Ramona Peters  
Tribal Historic Preservation Officer  
Mashpee Tribe  
483 Great Neck Road South  
Mashpee, MA 02649

Dear Ms. Peters:

Enclosed please find a Project Notification Form (PNF) for the above noted project in Chelsea. This project will be supported entirely with state funds, although work in water will require a U.S. Army Corps of Engineers' permit, the jurisdiction of which will cover the entire project area. This project, therefore, is a federal undertaking that requires review under Section 106 of the National Historic Preservation Act of 1966, as amended.

MassDOT is submitting the enclosed project information to the Tribal Historic Preservation Officer to meet the Section 106 consultation requirements of the U. S. Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Patricia Leavenworth, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jeffrey Shrimpton.

Please feel free to contact me at 857-368-8824 if you have any questions regarding this project.

Sincerely,

Jeffrey Shrimpton  
Cultural Resources Specialist  
Environmental Services

encs: PNF  
Site plan  
Locus  
Aerial Photos  
c.c.: K. Adams, ACOE

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION

220 MORRISSEY BOULEVARD

BOSTON, MASS. 02125

617-727-8470, FAX: 617-727-5128

**PROJECT NOTIFICATION FORM**

**Project Name:** Silver Line Gateway Extension (MassDOT # 604428)  
**Location /Address:** Grand Junction Railroad ROW and MBTA Newburyport-Rockport rail line.  
**City/Town:** Chelsea and Boston  
**Project Proponent**  
**Name:** Massachusetts Department of Transportation  
**Address:** 10 Park Plaza  
**City/Town/Zip/Telephon** Boston, MA 02116 / T: 617-973-7497

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

Army Corps of Engineers  
MassDOT

General permit, Section 404 of the Clean Water Act  
State Funding

**Project Description (narrative):**

The Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transit Authority (MBTA) are proposing to extend the Silver Line Gateway bus route from South Station in Boston to a new Chelsea Commuter Rail Station platform at Mystic Mall in Chelsea. In Boston, the Silver Line Gateway bus route will be located entirely on existing city streets and no new construction is required. The route begins at South Station in Boston and proceeds southeast across the Evelyn Moakley Bridge into South Boston. The route continues into the Seaport District in South Boston, north through the Ted Williams Tunnel to Logan Airport, and then north on Chelsea Street in East Boston to the Chelsea Street Bridge into Chelsea.

In Chelsea, the bus route will proceed in a northwesterly direction from the Chelsea Street Bridge to the Mystic Mall, a distance of approximately 1.2 miles. The Chelsea segment of the bus route will require construction of a new two-lane roadway on the abandoned and overgrown railroad bed along the Grand Junction railroad ROW (now owned by MassDOT) and then will continue onto the MBTA ROW, where the new roadway will be constructed on heavily disturbed ground parallel to the MBTA's active Newburyport-Rockport line. The new roadway will be separated from the active MBTA rail line by concrete barriers. The new roadway will terminate just west of Everett Avenue at a new bus turnaround on disturbed ground adjacent to the Mystic Mall parking lot. The new Silver Line Gateway roadway will be accessible only to Silver Line buses and emergency vehicles; no other motorized vehicular traffic will be permitted. A new shared use path will be constructed parallel to the new Silver Line Gateway roadway on existing ROW between Cottage Street and Chestnut Street.

A new Chelsea Commuter Rail Station platform will be constructed on both sides of the MBTA rail line adjacent to the new bus turnaround east of Everett Avenue near Market Basket. The existing rail station platform at Arlington St. in Chelsea will be removed. New passenger platforms also will be constructed along the new Silver Line bus route in Chelsea on the Grand Junction ROW and on the MBTA ROW.

The Washington Avenue Bridge (C-09-001) over the MBTA in Chelsea also will be replaced on the same alignment as part of this project. No roadway widening is proposed at the approaches to the bridge.

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

**Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.**

Yes. Bridge C-09-001, which carries Washington Avenue over the MBTA railroad, will be demolished and replaced with a new bridge constructed on the same alignment. The Washington Avenue Bridge is located ½ block north of the NR-listed Bellingham Square Historic District but is clearly outside of the district boundaries. The bridge is included in the MHC Inventory as CLS.920. The Washington Avenue Bridge is a mongrel two-span structure over the railroad consisting of a 1913 concrete slab superstructure at the south span and a 1960 steel stringer superstructure at the north span carried on a reinforced concrete south abutment, a reinforced concrete pier, and a late-19th century cut granite north abutment from an earlier bridge at this crossing. MHC, in a letter dated April 16, 1992, concurred with a finding by the Federal Highway Administration and MassHighway (now MassDOT) that the Washington Avenue Bridge is not eligible for listing in the National Register.

**Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation**

No.

**Does the project include new construction? If so, describe (attach plans and elevations if necessary).**

Yes. A new bridge will be constructed on the same alignment to replace the Washington Avenue Bridge (CLS.920). A new two-lane roadway will be constructed on the abandoned and overgrown rail bed along the Grand Junction railroad ROW (now owned by MassDOT) and then will continue onto the MBTA ROW, where the new roadway will be constructed on heavily disturbed ground parallel to the MBTA's active Newburyport-Rockport line.

**To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.**

A review of the National Register of Historic Places revealed that the project area in Boston is adjacent to the NR-listed South Station and the NR-listed Fort Point Channel Historic District. In Boston, the Silver Line Gateway bus route will be located entirely on existing city streets and no new construction is required adjacent to either South Station or the Fort Point Channel Historic District.

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A review of the MHC Inventory of the Historic and Archaeological Assets of the Commonwealth revealed two inventoried properties located adjacent to the abandoned Grand Junction railroad ROW in Chelsea: the Russell Box Company-Chelsea Carton Company Building (CLS.608), constructed in 1911, and the Russell Box Company Storehouse (CLS.610), constructed in 1914. The address for both buildings is 88 Gerrish Avenue. A third inventoried building, the Russell Box Company Engine House (CLS.609), has been demolished. The two existing Russell Box Company buildings have been rehabilitated into multi-family housing. A site visit by MassDOT's Cultural Resources Unit (CRU) staff on September 24, 2013, revealed that extensive new multi-family residential development has been constructed on the 88 Gerrish Avenue property. The new Silver Line Gateway roadway and the new shared use path will be constructed entirely within the MBTA ROW adjacent to property associated with 88 Gerrish Avenue. MassDOT's Cultural Resources Unit (CRU) staff visited the project area on September 24, 2013, and determined that no other properties adjacent to the project area appear to be eligible for listing in the National Register.

## 950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

## APPENDIX A (continued)

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What is the total acreage of the project area?

|            |       |       |                       |       |       |
|------------|-------|-------|-----------------------|-------|-------|
| Woodland   | _____ | acres | Productive Resources: |       |       |
| Wetland    | _____ | acres | Agriculture           | _____ | acres |
| Floodplain | _____ | acres | Forestry              | _____ | acres |
| Open Space | _____ | acres | Mining/Extraction     | _____ | acres |
| Developed  | _____ | acres | Total Project Acreage | 25    | acres |

What is the acreage of the proposed new construction? \_\_\_\_\_ acres

What is the present land use of the project area?

Railroad ROW, commercial development.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of person submitting this form: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Jeffrey Shrimpton

Address: 10 Park Plaza

City/Town/Zip: Boston, MA 02116

Telephone: 617-973-7497

## REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

7/1/93

950 CMR - 276



Deval L. Patrick, Governor  
Richard A. Davey, Secretary & CEO  
Frank DePaola, Administrator



December 24, 2013

RE: Chelsea-Boston (604428)  
Silver Line Gateway Extension and Replacement of Bridge C-09-001,  
Washington Avenue over MBTA (604428)  
Section 106 Review: Project Notification Form

Ms. Bettina Washington  
Tribal Historic Preservation Officer  
Wampanoag Tribe of Gay Head (Aquinnah)  
20 Black Brook Road  
Aquinnah, MA 02535

Dear Ms. Washington:

Enclosed please find a Project Notification Form (PNF) for the above noted project in Chelsea. This project will be supported entirely with state funds, although work in water will require a U.S. Army Corps of Engineers' permit, the jurisdiction of which will cover the entire project area. This project, therefore, is a federal undertaking that requires review under Section 106 of the National Historic Preservation Act of 1966, as amended.

MassDOT is submitting the enclosed project information to the Tribal Historic Preservation Officer to meet the Section 106 consultation requirements of the U. S. Army Corps of Engineers. Please submit any written comments or concerns regarding historic or archaeological properties that may be affected by this project to Patricia Leavenworth, P.E., Chief Engineer, Massachusetts Department of Transportation, 10 Park Plaza, Boston, MA 02116-3973, Attn: Jeffrey Shrimpton.

Please feel free to contact me at 857-368-8824 if you have any questions regarding this project.

Sincerely,

Jeffrey Shrimpton  
Cultural Resources Specialist  
Environmental Services

encs: PNF  
Site plan  
Locus  
Aerial Photos  
c.c.: K. Adams, ACOE

Ten Park Plaza, Suite 4160, Boston, MA 02116  
Tel: 857-368-4636, TTY: 857-368-0655  
[www.mass.gov/massdot](http://www.mass.gov/massdot)



950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION

220 MORRISSEY BOULEVARD

BOSTON, MASS. 02125

617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

**Project Name:** Silver Line Gateway Extension (MassDOT # 604428)  
**Location /Address:** Grand Junction Railroad ROW and MBTA Newburyport-Rockport rail line.  
**City/Town:** Chelsea and Boston  
**Project Proponent**  
**Name:** Massachusetts Department of Transportation  
**Address:** 10 Park Plaza  
**City/Town/Zip/Telephon** Boston, MA 02116 / T: 617-973-7497

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

Army Corps of Engineers  
MassDOT

General permit, Section 404 of the Clean Water Act  
State Funding

**Project Description (narrative):**

The Massachusetts Department of Transportation (MassDOT) and the Massachusetts Bay Transit Authority (MBTA) are proposing to extend the Silver Line Gateway bus route from South Station in Boston to a new Chelsea Commuter Rail Station platform at Mystic Mall in Chelsea. In Boston, the Silver Line Gateway bus route will be located entirely on existing city streets and no new construction is required. The route begins at South Station in Boston and proceeds southeast across the Evelyn Moakley Bridge into South Boston. The route continues into the Seaport District in South Boston, north through the Ted Williams Tunnel to Logan Airport, and then north on Chelsea Street in East Boston to the Chelsea Street Bridge into Chelsea.

In Chelsea, the bus route will proceed in a northwesterly direction from the Chelsea Street Bridge to the Mystic Mall, a distance of approximately 1.2 miles. The Chelsea segment of the bus route will require construction of a new two-lane roadway on the abandoned and overgrown railroad bed along the Grand Junction railroad ROW (now owned by MassDOT) and then will continue onto the MBTA ROW, where the new roadway will be constructed on heavily disturbed ground parallel to the MBTA's active Newburyport-Rockport line. The new roadway will be separated from the active MBTA rail line by concrete barriers. The new roadway will terminate just west of Everett Avenue at a new bus turnaround on disturbed ground adjacent to the Mystic Mall parking lot. The new Silver Line Gateway roadway will be accessible only to Silver Line buses and emergency vehicles; no other motorized vehicular traffic will be permitted. A new shared use path will be constructed parallel to the new Silver Line Gateway roadway on existing ROW between Cottage Street and Chestnut Street.

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The Washington Avenue Bridge (C-09-001) over the MBTA in Chelsea also will be replaced on the same alignment as part of this project. No roadway widening is proposed at the approaches to the bridge.

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

**Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.**

Yes. Bridge C-09-001, which carries Washington Avenue over the MBTA railroad, will be demolished and replaced with a new bridge constructed on the same alignment. The Washington Avenue Bridge is located ½ block north of the NR-listed Bellingham Square Historic District but is clearly outside of the district boundaries. The bridge is included in the MHC Inventory as CLS.920. The Washington Avenue Bridge is a mongrel two-span structure over the railroad consisting of a 1913 concrete slab superstructure at the south span and a 1960 steel stringer superstructure at the north span carried on a reinforced concrete south abutment, a reinforced concrete pier, and a late-19th century cut granite north abutment from an earlier bridge at this crossing. MHC, in a letter dated April 16, 1992, concurred with a finding by the Federal Highway Administration and MassHighway (now MassDOT) that the Washington Avenue Bridge is not eligible for listing in the National Register.

**Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation**

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**Does the project include new construction? If so, describe (attach plans and elevations if necessary).**

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**To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.**

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## 950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

## APPENDIX A (continued)

A review of the MHC archaeological base maps revealed no recorded pre-contact or historic sites in the vicinity of the project area in Chelsea. Project impacts will be confined to the abandoned Grand Junction railroad bed, heavily graded track-side areas with steep side sloped within the active MBTA railroad ROW, paved areas at the Mystic Mall, and the Washington Avenue Bridge with no widening at the approaches. MassDOT's Archaeological Resources Supervisor, John Rempelakis, and other MassDOT Cultural Resources Unit (CRU) staff walked the entire ½ mile length of the Grand Junction ROW on September 24, 2013, and also viewed as much of the active MBTA ROW as feasible from overpasses and intersecting streets. CRU staff has determined that the entire project area has been heavily disturbed by the effects of past railroad, roadway, and bridge construction and high-density residential and commercial development and, thus, little or no archaeological potential may be ascribed to the project area. No visible remains or features of possible historical significance were encountered during the site visit.

What is the total acreage of the project area?

|            |       |       |                       |       |       |
|------------|-------|-------|-----------------------|-------|-------|
| Woodland   | _____ | acres | Productive Resources: |       |       |
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| Floodplain | _____ | acres | Forestry              | _____ | acres |
| Open Space | _____ | acres | Mining/Extraction     | _____ | acres |
| Developed  | _____ | acres | Total Project Acreage | 25    | acres |

What is the acreage of the proposed new construction? \_\_\_\_\_ acres

What is the present land use of the project area?

Railroad ROW, commercial development.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of person submitting this form: \_\_\_\_\_

Date: \_\_\_\_\_

Name: Jeffrey Shrimpton

Address: 10 Park Plaza

City/Town/Zip: Boston, MA 02116

Telephone: 617-973-7497

## REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

7/1/93

950 CMR - 276

## **Appendix D**

### **Delineation Datasheets & Functions and Values Forms**

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: W1-WP1

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 1-3 Lat: -71.025230 Long: 42.390904 Datum: WGS84

Soil Map Unit Name: Urban Land/Udorthents NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|   |   |  |   |
|---|---|--|---|
| Hydrophytic Vegetation Present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Is the Sampled Area<br>within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br><br>If yes, optional Wetland Site ID: _____ |
| Hydric Soil Present?  | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |   |
| Remarks: (explain alternative procedures here or in separate report)<br>Wetland is located within an old rail bed. Soils consist of railbed gravel (2-4" across in size) and is dominated with invasive vegetation. |   |  |   |

## HYDROLOGY

| Wetland Hydrology Indicators:   |  | Secondary Indicators (minimum of two required)   |
|---|--|--|
| Primary Indicators (minimum of one is required; check all that apply)   |  |  |
| <input checked="" type="checkbox"/> Surface Water (A1)  | <input type="checkbox"/> Water-Stained Leaves (B9)                                   | <input type="checkbox"/> Surface Soil Cracks (B6)  |
| <input type="checkbox"/> High Water Table (A2)  | <input type="checkbox"/> Aquatic Fauna (B13)   | <input type="checkbox"/> Drainage Patterns (B10)   |
| <input type="checkbox"/> Saturation (A3)  | <input type="checkbox"/> Marl Deposits (B15)   | <input type="checkbox"/> Moss Trim Lines (B16)   |
| <input checked="" type="checkbox"/> Water Marks (B1)  | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                                  | <input type="checkbox"/> Dry-Season Water Table (C2)   |
| <input type="checkbox"/> Sediment Deposits (B2)   | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)                  | <input type="checkbox"/> Crayfish Burrows (C8)   |
| <input type="checkbox"/> Drift Deposits (B3)  | <input type="checkbox"/> Presence of Reduced Iron (C4)                               | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)  | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)                  | <input type="checkbox"/> Stunted or Stressed Plants (D1)                                       |
| <input type="checkbox"/> Iron Deposits (B5)   | <input type="checkbox"/> Thin Muck Surface (C7)                                      | <input type="checkbox"/> Geomorphic Position (D2)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  | <input type="checkbox"/> Other (Explain in Remarks)                                  | <input type="checkbox"/> Shallow Aquitard (D3)   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)  |  | <input type="checkbox"/> Microtopographic Relief (D4)  |
|   |  | <input type="checkbox"/> FAC-Neutral Test (D5)   |
| <b>Field Observations:</b>  |  |  |
| Surface Water Present?  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches) 6 | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Water Table Present?  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches)   |  |
| Saturation Present?   | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches) 0 |  |
| (include capillary fringe)  |  |  |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  |  |  |
| Remarks:<br>Wetland is completely isolated with no inlet/outlet pipes observed and no surface water connections. Hydrologic input is from surface sheet flow from adjacent impervious surfaces and disturbed uplands. |  |  |



## VEGETATION – Use scientific names of plants

Sampling Point: W1WP1

| <u>Tree Stratum</u> (Plot size:30 ft)          | <u>Absolute<br/>% Cover</u> | <u>Dominant<br/>Species?</u> | <u>Indicator<br/>Status</u> | <b>Dominance Test worksheet:</b>   |  |
|--|-----------------------------|------------------------------|-----------------------------|--|--|
| 1.   |                             |                              |                             | Number of Dominant Species That Are OBL, FACW, or FAC:   | 4 (A)  |
| 2.   |                             |                              |                             | Total Number of Dominant Species Across All Strata:  | 4 (B)  |
| 3.   |                             |                              |                             | Percent of Dominant Species That Are OBL, FACW, or FAC:  | 100% (C)   |
| 4.   |                             |                              |                             | <b>Prevalence Index worksheet:</b>   |  |
| 5.   |                             |                              |                             | <u>Total % Cover of:</u>   | <u>Multiply by:</u>  |
| 6.   |                             |                              |                             | OBL species  | x 1 =  |
| 7.   |                             |                              |                             | FACW species   | x 2 =  |
|  |                             |                              |                             | FAC species  | x 3 =  |
|  |                             |                              |                             | FACU species   | x 4 =  |
|  |                             |                              |                             | UPL species  | x 5 =  |
|  |                             |                              |                             | Column Totals:   | (A) (B)  |
|  |                             |                              |                             | Prevalence Index = B/A =   |  |
|  |                             |                              |                             | <b>Hydrophytic Vegetation Indicators:</b>  |  |
|  |                             |                              |                             | <input checked="" type="checkbox"/>  | Rapid Test for Hydrophytic Vegetation  |
|  |                             |                              |                             | <input checked="" type="checkbox"/>  | Dominance Test is >50%   |
|  |                             |                              |                             | <input type="checkbox"/>   | Prevalence Index is ≤3.01  |
|  |                             |                              |                             | <input type="checkbox"/>   | Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |
|  |                             |                              |                             | <input type="checkbox"/>   | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
|  |                             |                              |                             | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |  |
|  |                             |                              |                             | <b>Definitions of Vegetation Strata:</b>   |  |
|  |                             |                              |                             | <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.    |  |
|  |                             |                              |                             | <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.                   |  |
|  |                             |                              |                             | <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  |  |
|  |                             |                              |                             | <b>Woody vines</b> – All woody vines greater than 3.28 ft in height  |  |
|  |                             |                              |                             | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>     |  |
| <u>Sapling/Shrub Stratum</u> (Plot size:15 ft) |                             |                              |                             |  |  |
| 1. Salix discolor                              | 28                          | Y                            | FACW                        |  |  |
| 2.   |                             |                              |                             |  |  |
| 3.   |                             |                              |                             |  |  |
| 4.   |                             |                              |                             |  |  |
| 5.   |                             |                              |                             |  |  |
| 6.   |                             |                              |                             |  |  |
| 7.   |                             |                              |                             |  |  |
| 8.   |                             |                              |                             |  |  |
|  |                             |                              |                             | = Total Cover  |  |
| <u>Herb Stratum</u> (Plot size:5 ft)           |                             |                              |                             |  |  |
| 1. Calamagrostis canadensis                    | 38                          | Y                            | OBL                         |  |  |
| 2. Juncus effusus                              | 28                          | Y                            | OBL                         |  |  |
| 3. Lythrum salicaria                           | 23                          | Y                            | OBL                         |  |  |
| 4. Phragmites australis                        | 8                           |                              | OBL                         |  |  |
| 5.   |                             |                              |                             |  |  |
| 6.   |                             |                              |                             |  |  |
| 7.   |                             |                              |                             |  |  |
| 8.   |                             |                              |                             |  |  |
| 9.   |                             |                              |                             |  |  |
| 10.  |                             |                              |                             |  |  |
| 11.  |                             |                              |                             |  |  |
| 12.  |                             |                              |                             |  |  |
|  |                             |                              |                             | 97 = Total Cover   |  |
| <u>Woody Vine Stratum</u> (Plot size:30 ft)    |                             |                              |                             |  |  |
| 1.   |                             |                              |                             |  |  |
| 2.   |                             |                              |                             |  |  |
| 3.   |                             |                              |                             |  |  |
| 4.   |                             |                              |                             |  |  |
|  |                             |                              |                             | = Total Cover  |  |

Remarks: (Include photo numbers here or on a separate sheet.)  
Photo #1

## SOIL

Sampling Point: W1WP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |   | Redox Features |   |                   |                  | Texture | Remarks |
|-------------------|---------------|---|----------------|---|-------------------|------------------|---------|---------|
|                   | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.    <sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input checked="" type="checkbox"/> Other (Explain in Remarks)       |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present?    Yes ☐    No ☒

## Remarks:

Area is an old rail bed and no actual soils are present. Substrate consists of pure railbed gravel with pieces that are 2-4" across in size.

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: W1-UP1

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Concave

Slope (%): -13 Lat: -71.025254 Long: 42.390948 Datum: WGS84

Soil Map Unit Name: Urban Land/Udorthents NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Hydric Soil Present? Yes ☐ No ☒

Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area

within a Wetland?

Yes ☐

No ☒

If yes, optional Wetland Site ID: \_\_\_\_\_

Remarks: (explain alternative procedures here or in separate report)

Uplands are within an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation.

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Water-Stained Leaves (B9)                  |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> Aquatic Fauna (B13)                        |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Marl Deposits (B15)                        |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Algal Mat or Crust (B4)                   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   |

### Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches)

Water Table Present? Yes ☐ No ☒ Depth (inches)

Saturation Present? Yes ☐ No ☒ Depth (inches)

(include capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

### Remarks:

## VEGETATION – Use scientific names of plants

Sampling Point: W1UP1

|  | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
|--|---------------------|----------------------|---------------------|---|-------------------|--------------|-------------|-------|--------------|-------|-------------|-------|--------------|-------|-------------|-------|----------------|---------|--------------------------|--|
| <b>Tree Stratum</b> (Plot size:30 ft)          |                     |                      |                     | <b>Dominance Test worksheet:</b>  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1. Acer platanoides                            | 28                  | Y                    | UPL                 | Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.   |                     |                      |                     | Total Number of Dominant Species Across All Strata: 4 (B)   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.   |                     |                      |                     | Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (C)  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.   |                     |                      |                     | <b>Prevalence Index worksheet:</b><br><table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals:</td> <td>(A) (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> </tr> </table>   | Total % Cover of: | Multiply by: | OBL species | x 1 = | FACW species | x 2 = | FAC species | x 3 = | FACU species | x 4 = | UPL species | x 5 = | Column Totals: | (A) (B) | Prevalence Index = B/A = |  |
| Total % Cover of:                              | Multiply by:        |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| OBL species                                    | x 1 =               |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FACW species                                   | x 2 =               |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FAC species                                    | x 3 =               |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FACU species                                   | x 4 =               |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| UPL species                                    | x 5 =               |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| Column Totals:                                 | (A) (B)             |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| Prevalence Index = B/A =                       |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 8.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| = Total Cover                                  |                     |                      |                     | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.01<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <b>Sapling/Shrub Stratum</b> (Plot size:15 ft) |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5.   |                     |                      |                     | <b>Definitions of Vegetation Strata:</b><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 8.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 9.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| = Total Cover                                  |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <b>Herb Stratum</b> (Plot size:5 ft)           |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1. Plantago major                              | 8                   |                      | FACU                |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2. Trifolium pratense                          | 13                  |                      | FACU                |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3. Phleum pratense                             | 18                  | Y                    | UPL                 |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4. Artemisia vulgaris                          | 23                  | Y                    | UPL                 |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5. Leucanthemum vulgare                        | 3                   |                      | UPL                 | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6. Solidago rugosa                             | 13                  |                      | FAC                 |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7. Parthenocissus quinquefolia                 | 28                  | Y                    | FACU                |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 8. Tanacetum vulgare                           | 3                   |                      | FACU                |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 9.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 10.  |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 11.  |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 12.  |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 109 = Total Cover                              |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <b>Woody Vine Stratum</b> (Plot size:30 ft)    |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1.   |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.   |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| = Total Cover                                  |                     |                      |                     |   |                   |              |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |

Remarks: (Include photo numbers here or on a separate sheet.)

Photo #2

## SOIL

Sampling Point: W1UP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |   | Redox Features |   |                   |                  | Texture | Remarks |
|-------------------|---------------|---|----------------|---|-------------------|------------------|---------|---------|
|                   | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |

|      |          |     |  |  |  |  |     |                                      |
|------|----------|-----|--|--|--|--|-----|--------------------------------------|
| 0-16 | 10YR 3/2 | 100 |  |  |  |  | FSL | Extremely Gravelly<br>Refusal at 16" |
|------|----------|-----|--|--|--|--|-----|--------------------------------------|

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.    <sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present?    Yes ☐    No ☒

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed fill soils.

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: W2-WP1

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): -13 Lat: -71.025612 Long: 42.391613 Datum: WGS84

Soil Map Unit Name: Urban Land/Urban NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

|  |   |                             |   |
|--|---|-----------------------------|---|
| Hydrophytic Vegetation Present?  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Is the Sampled Area<br>within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/><br><br>If yes, optional Wetland Site ID: _____ |
| Hydric Soil Present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Wetland Hydrology Present?   | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |   |
| Remarks: (explain alternative procedures here or in separate report)<br>Wetland is an isolated narrow depression/swale within an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation. |   |                             |   |

## HYDROLOGY

| Wetland Hydrology Indicators:   |   | Secondary Indicators (minimum of two required)   |
|---|---|--|
| Primary Indicators (minimum of one is required; check all that apply)   |   |  |
| <input checked="" type="checkbox"/> Surface Water (A1)  | <input type="checkbox"/> Water-Stained Leaves (B9)                  | <input type="checkbox"/> Surface Soil Cracks (B6)  |
| <input type="checkbox"/> High Water Table (A2)  | <input type="checkbox"/> Aquatic Fauna (B13)                        | <input type="checkbox"/> Drainage Patterns (B10)   |
| <input type="checkbox"/> Saturation (A3)  | <input type="checkbox"/> Marl Deposits (B15)                        | <input type="checkbox"/> Moss Trim Lines (B16)   |
| <input type="checkbox"/> Water Marks (B1)   | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Dry-Season Water Table (C2)   |
| <input type="checkbox"/> Sediment Deposits (B2)   | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8)   |
| <input type="checkbox"/> Drift Deposits (B3)  | <input checked="" type="checkbox"/> Presence of Reduced Iron (C4)   | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)  | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1)                                       |
| <input type="checkbox"/> Iron Deposits (B5)   | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input type="checkbox"/> Geomorphic Position (D2)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  | <input type="checkbox"/> Other (Explain in Remarks)                 | <input type="checkbox"/> Shallow Aquitard (D3)   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)  |   | <input type="checkbox"/> Microtopographic Relief (D4)  |
|   |   | <input type="checkbox"/> FAC-Neutral Test (D5)   |
| <b>Field Observations:</b>  |   | Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches) 6   |   |  |
| Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches)   |   |  |
| Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches) 0<br>(include capillary fringe)  |   |  |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  |   |  |
| Remarks:<br>Surface water observed in W2 is perched on compacted soils. No water table encountered down to 16" directly adjacent to swale despite only several inches difference in elevation between upland and wetland. |   |  |



## VEGETATION – Use scientific names of plants

Sampling Point: W2WP1

| <u>Tree Stratum</u> (Plot size:30 ft)                                     | <u>Absolute<br/>% Cover</u> | <u>Dominant<br/>Species?</u> | <u>Indicator<br/>Status</u> | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)<br><br>Total Number of Dominant Species Across All Strata: _____ (B)<br><br>Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (C)<br><br><b>Prevalence Index worksheet:</b><br><table> <tr> <td><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td>x 5 =</td> </tr> <tr> <td>Column Totals:</td> <td>(A) (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =</td> </tr> </table> | <u>Total % Cover of:</u> | <u>Multiply by:</u> | OBL species | x 1 = | FACW species | x 2 = | FAC species | x 3 = | FACU species | x 4 = | UPL species | x 5 = | Column Totals: | (A) (B) | Prevalence Index = B/A = |  |
|---|-----------------------------|------------------------------|-----------------------------|--|--------------------------|---------------------|-------------|-------|--------------|-------|-------------|-------|--------------|-------|-------------|-------|----------------|---------|--------------------------|--|
| <u>Total % Cover of:</u>  | <u>Multiply by:</u>         |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| OBL species   | x 1 =                       |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FACW species  | x 2 =                       |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FAC species   | x 3 =                       |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| FACU species  | x 4 =                       |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| UPL species   | x 5 =                       |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| Column Totals:  | (A) (B)                     |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| Prevalence Index = B/A =  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1.  |                             |                              |                             | = Total Cover  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <u>Sapling/Shrub Stratum</u> (Plot size:15 ft)                            |                             |                              |                             | = Total Cover  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <u>Herb Stratum</u> (Plot size:5 ft)                                      |                             |                              |                             | <b>Hydrophytic Vegetation Indicators:</b><br><input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.01<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.   |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1. Phragmites australis   | 8                           |                              | FACW                        |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2. Carex vulpinoidea  | 73                          |                              | OBL                         |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3. Lythrum salicaria  | 23                          |                              | OBL                         |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4. Juncus effusus   | 8                           |                              | OBL                         |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 5.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 6.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 7.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 8.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 9.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 10.   |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 11.   |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 12.   |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
|   | 112                         |                              |                             | = Total Cover  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| <u>Woody Vine Stratum</u> (Plot size:30 ft)                               |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 1.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 2.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 3.  |                             |                              |                             | <b>Definitions of Vegetation Strata:</b><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| 4.  |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
|   |                             |                              |                             | = Total Cover  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
|   |                             |                              |                             |  |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |
| Remarks: (Include photo numbers here or on a separate sheet.)<br>Photo #3 |                             |                              |                             | <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>   |                          |                     |             |       |              |       |             |       |              |       |             |       |                |         |                          |  |

## SOIL

Sampling Point: W2WP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks                                 |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|---|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |   |
| 0-6               | 10YR 2/1      | 100 |                |   |                   |                  | FSL     | Extremely Gravelly                      |
| 6-12              | 10YR 5/1      | 94  | 10YR 4/6       | 6 | D                 | M                | SiL     | Extremely Gravelly<br>Refusal at 10-12" |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain. <sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input checked="" type="checkbox"/> Depleted Matrix (F3)                 |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input checked="" type="checkbox"/> Redox Dark Surface (F6)              |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present? Yes ☒ No ☐

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: W2-UP1

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 1-3 Lat: -71.025577 Long: 42.391639 Datum: WGS84

Soil Map Unit Name: Urban Land/Udorthents NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Hydric Soil Present? Yes ☐ No ☒

Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area

within a Wetland?

Yes ☐

No ☒

If yes, optional Wetland Site ID: \_\_\_\_\_

Remarks: (explain alternative procedures here or in separate report)

Uplands are within an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation.

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ Marl Deposits (B15)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres on Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

### Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry-Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches)

Water Table Present? Yes ☐ No ☒ Depth (inches)

Saturation Present? Yes ☐ No ☒ Depth (inches)

(include capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION – Use scientific names of plants

Sampling Point: W2UP1

| <u>Tree Stratum</u> (Plot size:30 ft)          | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)<br>Total Number of Dominant Species Across All Strata: 2 (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (C)<br><b>Prevalence Index worksheet:</b><br>Total % Cover of: Multiply by:<br>OBL species x 1 =<br>FACW species x 2 =<br>FAC species x 3 =<br>FACU species x 4 =<br>UPL species x 5 =<br>Column Totals: (A) (B)<br>Prevalence Index = B/A = |
|--|-------------------------|--------------------------|-------------------------|--|
| 1.   |                         |                          |                         |  |
| 2.   |                         |                          |                         |  |
| 3.   |                         |                          |                         |  |
| 4.   |                         |                          |                         |  |
| 5.   |                         |                          |                         |  |
| 6.   |                         |                          |                         |  |
| 7.   |                         |                          |                         |  |
| = Total Cover                                  |                         |                          |                         |  |
| <u>Sapling/Shrub Stratum</u> (Plot size:15 ft) |                         |                          |                         |  |
| 1.   |                         |                          |                         |  |
| 2.   |                         |                          |                         |  |
| 3.   |                         |                          |                         |  |
| 4.   |                         |                          |                         |  |
| 5.   |                         |                          |                         |  |
| 6.   |                         |                          |                         |  |
| 7.   |                         |                          |                         |  |
| 8.   |                         |                          |                         |  |
| = Total Cover                                  |                         |                          |                         |  |
| <u>Herb Stratum</u> (Plot size:5 ft)           |                         |                          |                         |  |
| 1. Plantago major                              | 8                       |                          | FACU                    |  |
| 2. Trifolium pratense                          | 18                      | Y                        | FACU                    |  |
| 3. Lespedeza hirta                             | 13                      |                          | UPL                     |  |
| 4. Dactylis glomerata                          | 23                      | Y                        | FACU                    |  |
| 5. Poa pratensis                               | 13                      |                          | FACU                    |  |
| 6.   |                         |                          |                         |  |
| 7.   |                         |                          |                         |  |
| 8.   |                         |                          |                         |  |
| 9.   |                         |                          |                         |  |
| 10.  |                         |                          |                         |  |
| 11.  |                         |                          |                         |  |
| 12.  |                         |                          |                         |  |
| 75 = Total Cover                               |                         |                          |                         |  |
| <u>Woody Vine Stratum</u> (Plot size:30 ft)    |                         |                          |                         |  |
| 1.   |                         |                          |                         |  |
| 2.   |                         |                          |                         |  |
| 3.   |                         |                          |                         |  |
| 4.   |                         |                          |                         |  |
| = Total Cover                                  |                         |                          |                         |  |

**Hydrophytic Vegetation Indicators:**

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is >50%

☐ Prevalence Index is ≤3.01

☐ Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** – All woody vines greater than 3.28 ft in height

**Hydrophytic Vegetation Present?** Yes ☐ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)

Photo #4

## SOIL

Sampling Point: W2UP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |   | Redox Features |   |                   |                  | Texture | Remarks |
|-------------------|---------------|---|----------------|---|-------------------|------------------|---------|---------|
|                   | Color (moist) | % | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |         |

|      |          |     |  |  |  |  |     |   |
|------|----------|-----|--|--|--|--|-----|---|
| 0-12 | 10YR 4/3 | 100 |  |  |  |  | FSL | Extremely Gravelly<br>Refusal at 10-12" |
|------|----------|-----|--|--|--|--|-----|---|

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.    <sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present?    Yes ☐    No ☒

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013Applicant/Owner: MassDOT State: MA Sampling Point: UP3-P1Investigator(s): SE Section, Township, Range: \_\_\_\_\_Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): NoneSlope (%): 1-3 Lat: -71.026122 Long: 42.392249 Datum: WGS84Soil Map Unit Name: Urban Land/Urban Land NWI Classification: \_\_\_\_\_Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |   |   |
|--|---|---|
| Hydrophytic Vegetation Present?  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area<br>within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br><br>If yes, optional Wetland Site ID: _____ |
| Hydric Soil Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |
| Remarks: (explain alternative procedures here or in separate report)<br>Area is an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation. Boundaries demarcate extent of phragmites growth, however, all other vegetation present is FAC or drier, and the only visible hydrology is standing water in gravel parking just off site to the east of this area. |   |   |

**HYDROLOGY**

| Wetland Hydrology Indicators:  |   | Secondary Indicators (minimum of two required)  |
|--|---|---|
| Primary Indicators (minimum of one is required; check all that apply)  |   |   |
| <input type="checkbox"/> Surface Water (A1)  | <input type="checkbox"/> Water-Stained Leaves (B9)                  | <input type="checkbox"/> Surface Soil Cracks (B6)   |
| <input type="checkbox"/> High Water Table (A2)   | <input type="checkbox"/> Aquatic Fauna (B13)                        | <input type="checkbox"/> Drainage Patterns (B10)  |
| <input type="checkbox"/> Saturation (A3)   | <input type="checkbox"/> Marl Deposits (B15)                        | <input type="checkbox"/> Moss Trim Lines (B16)  |
| <input type="checkbox"/> Water Marks (B1)  | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 | <input type="checkbox"/> Dry-Season Water Table (C2)  |
| <input type="checkbox"/> Sediment Deposits (B2)  | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8)  |
| <input type="checkbox"/> Drift Deposits (B3)   | <input type="checkbox"/> Presence of Reduced Iron (C4)              | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)                                    |
| <input type="checkbox"/> Algal Mat or Crust (B4)   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1)  |
| <input type="checkbox"/> Iron Deposits (B5)  | <input type="checkbox"/> Thin Muck Surface (C7)                     | <input type="checkbox"/> Geomorphic Position (D2)   |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)   | <input type="checkbox"/> Other (Explain in Remarks)                 | <input type="checkbox"/> Shallow Aquitard (D3)  |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |   | <input type="checkbox"/> Microtopographic Relief (D4)   |
|  |   | <input type="checkbox"/> FAC-Neutral Test (D5)  |
| <b>Field Observations:</b><br>Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches)<br>Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches)<br>Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches)<br>(include capillary fringe) |   | <b>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b> |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:   |   |   |
| Remarks:   |   |   |



## VEGETATION – Use scientific names of plants

Sampling Point: UP3-P1

| Tree Stratum (Plot size:30 ft)  | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test worksheet:   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
|---|---------------------|----------------------|---------------------|---|-------------------------|--------------|---------------|---------|-----------------------|----------|---------------|----------|--------------------|-----------|----------------|----------|-----------------------|---------|-----------------------------|------|---------------------|---|--|-----|-------------------------|----|---|------|--------------------------------|---|--|------|----|--|--|--|----|--|--|--|-----|--|--|--|-----|--|--|--|-----|--|--|
| 1.  |                     |                      |                     | Number of Dominant Species 1 (A)  |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 2.  |                     |                      |                     | That Are OBL, FACW, or FAC:   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 3.  |                     |                      |                     | Total Number of Dominant Species Across All Strata: 3 (B)   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 4.  |                     |                      |                     | Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (C)   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 5.  |                     |                      |                     | <b>Prevalence Index worksheet:</b><br><table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species 0</td> <td>x 1 = 0</td> </tr> <tr> <td>FACW species 33</td> <td>x 2 = 46</td> </tr> <tr> <td>FAC species 8</td> <td>x 3 = 24</td> </tr> <tr> <td>FACU species 55</td> <td>x 4 = 268</td> </tr> <tr> <td>UPL species 39</td> <td>x 5 = 85</td> </tr> <tr> <td>Column Totals: 135(A)</td> <td>505 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =3.7</td> </tr> </table>                                   | Total % Cover of:       | Multiply by: | OBL species 0 | x 1 = 0 | FACW species 33       | x 2 = 46 | FAC species 8 | x 3 = 24 | FACU species 55    | x 4 = 268 | UPL species 39 | x 5 = 85 | Column Totals: 135(A) | 505 (B) | Prevalence Index = B/A =3.7 |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| Total % Cover of:   | Multiply by:        |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| OBL species 0   | x 1 = 0             |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| FACW species 33   | x 2 = 46            |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| FAC species 8   | x 3 = 24            |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| FACU species 55   | x 4 = 268           |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| UPL species 39  | x 5 = 85            |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| Column Totals: 135(A)   | 505 (B)             |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| Prevalence Index = B/A =3.7   |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 6.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 7.  |                     |                      |                     | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.01<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 8.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| = Total Cover   |                     |                      |                     | <b>Definitions of Vegetation Strata:</b><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| <b>Sapling/Shrub Stratum (Plot size:15 ft)</b><br><table border="0"> <tr> <td>1. Robinia pseudoacacia</td> <td>18</td> <td>Y</td> <td>FACU</td> </tr> <tr> <td>2. Rubus occidentalis</td> <td>23</td> <td>Y</td> <td>UPL</td> </tr> <tr> <td>3. Rosa multiflora</td> <td>8</td> <td></td> <td>FACU</td> </tr> <tr> <td>4.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>6.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>7.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>8.</td> <td></td> <td></td> <td></td> </tr> </table>   |                     |                      |                     |   | 1. Robinia pseudoacacia | 18           | Y             | FACU    | 2. Rubus occidentalis | 23       | Y             | UPL      | 3. Rosa multiflora | 8         |                | FACU     | 4.                    |         |                             |      | 5.                  |   |  |     | 6.                      |    |   |      | 7.                             |   |  |      | 8. |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 1. Robinia pseudoacacia   | 18                  | Y                    | FACU                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 2. Rubus occidentalis   | 23                  | Y                    | UPL                 |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 3. Rosa multiflora  | 8                   |                      | FACU                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 4.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 5.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 6.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 7.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 8.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 49 = Total Cover  |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| <b>Herb Stratum (Plot size:5 ft)</b><br><table border="0"> <tr> <td>1. Dactylis glomerata</td> <td>8</td> <td></td> <td>FACU</td> </tr> <tr> <td>2. Artemisia vulgaris</td> <td>13</td> <td>Y</td> <td>UPL</td> </tr> <tr> <td>3. Solidago rugosa</td> <td>8</td> <td></td> <td>FAC</td> </tr> <tr> <td>4. Poa pratensis</td> <td>13</td> <td></td> <td>FACU</td> </tr> <tr> <td>5. Silene cucubalus</td> <td>3</td> <td></td> <td>UPL</td> </tr> <tr> <td>6. Phragmites australis</td> <td>33</td> <td>Y</td> <td>FACW</td> </tr> <tr> <td>7. Parthenocissus quinquefolia</td> <td>8</td> <td></td> <td>FACU</td> </tr> <tr> <td>8.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>9.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>10.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>11.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>12.</td> <td></td> <td></td> <td></td> </tr> </table> |                     |                      |                     |   | 1. Dactylis glomerata   | 8            |               | FACU    | 2. Artemisia vulgaris | 13       | Y             | UPL      | 3. Solidago rugosa | 8         |                | FAC      | 4. Poa pratensis      | 13      |                             | FACU | 5. Silene cucubalus | 3 |  | UPL | 6. Phragmites australis | 33 | Y | FACW | 7. Parthenocissus quinquefolia | 8 |  | FACU | 8. |  |  |  | 9. |  |  |  | 10. |  |  |  | 11. |  |  |  | 12. |  |  |
| 1. Dactylis glomerata   | 8                   |                      | FACU                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 2. Artemisia vulgaris   | 13                  | Y                    | UPL                 |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 3. Solidago rugosa  | 8                   |                      | FAC                 |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 4. Poa pratensis  | 13                  |                      | FACU                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 5. Silene cucubalus   | 3                   |                      | UPL                 |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 6. Phragmites australis   | 33                  | Y                    | FACW                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 7. Parthenocissus quinquefolia  | 8                   |                      | FACU                |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 8.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 9.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 10.   |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 11.   |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 12.   |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 86 = Total Cover  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| <b>Woody Vine Stratum (Plot size:30 ft)</b><br><table border="0"> <tr> <td>1.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3.</td> <td></td> <td></td> <td></td> </tr> <tr> <td>4.</td> <td></td> <td></td> <td></td> </tr> </table>  |                     |                      |                     | 1.  |                         |              |               | 2.      |                       |          |               | 3.       |                    |           |                | 4.       |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 1.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 2.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 3.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| 4.  |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |
| = Total Cover   |                     |                      |                     |   |                         |              |               |         |                       |          |               |          |                    |           |                |          |                       |         |                             |      |                     |   |  |     |                         |    |   |      |                                |   |  |      |    |  |  |  |    |  |  |  |     |  |  |  |     |  |  |  |     |  |  |

Remarks: (Include photo numbers here or on a separate sheet.)  
Photo #5

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks            |
|----------------|---------------|-----|----------------|---|-------------------|------------------|---------|--------------------|
|                | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |                    |
| 0-4            | 10YR 3/2      | 100 |                |   |                   |                  | FSL     | Extremely Gravelly |
| 4-16           | 10YR 3/3      | 50  |                |   |                   |                  | FSL     | Refusal at 12-16"  |
|                | 2.5Y 5/4      | 50  |                |   |                   |                  |         |                    |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.

<sup>2</sup>Location: PL=Pore Lining M=Matrix

**Hydric Soil Indicators:**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)  
☐ Dark Surface (S7) (LRR, R, MLRA 149B)

- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)  
☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)  
☐ Loamy Mucky Mineral (F1) (LRR K, L)  
☐ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)  
☐ Coast Prairie Redox (A16) (LRR K, L, R)  
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  
☐ Dark Surface (S7) (LRR K, L)  
☐ Polyvalue Below Surface (S8) (LRR K, L)  
☐ Thin Dark Surface (S9) (LRR K, L)  
☐ Iron-Manganese Masses (F12)  
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)  
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)  
☐ Red Parent Material (TF2)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present? Yes ☐ No ☒

**Remarks:**

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: UP3-P2

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 1-3 Lat: -71.026122 Long: 42.392248 Datum: WGS84

Soil Map Unit Name: Urban Land/Udorthents NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Hydric Soil Present? Yes ☐ No ☒

Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area

within a Wetland?

Yes ☐

No ☒

If yes, optional Wetland Site ID: \_\_\_\_\_

Remarks: (explain alternative procedures here or in separate report)

Area is an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation. Boundaries demarcate extent of phragmites growth, however, nearly all other vegetation present is FAC or drier, and the only visible hydrology is standing water in gravel lot just off site to the east of this area.

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ Marl Deposits (B15)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres on Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

### Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry-Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches)

Water Table Present? Yes ☐ No ☒ Depth (inches)

Saturation Present? Yes ☐ No ☒ Depth (inches)

(include capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION – Use scientific names of plants

Sampling Point: UP3-P2

| Tree Stratum (Plot size:30 ft)                 | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test worksheet:   |              |
|--|---------------------|----------------------|---------------------|---|--------------|
| 1.   |                     |                      |                     | Number of Dominant Species That Are OBL, FACW, or FAC:  | 1 (A)        |
| 2.   |                     |                      |                     | Total Number of Dominant Species Across All Strata:   | 3 (B)        |
| 3.   |                     |                      |                     | Percent of Dominant Species That Are OBL, FACW, or FAC:   | 33% (C)      |
| 4.   |                     |                      |                     | <b>Prevalence Index worksheet:</b>  |              |
| 5.   |                     |                      |                     | Total % Cover of:   | Multiply by: |
| 6.   |                     |                      |                     | OBL species 8   | x 1 = 8      |
| 7.   |                     |                      |                     | FACW species 23   | x 2 = 46     |
|  |                     |                      |                     | FAC species 8   | x 3 = 24     |
|  |                     |                      |                     | FACU species 67   | x 4 = 268    |
|  |                     |                      |                     | UPL species 17  | x 5 = 85     |
|  |                     |                      |                     | Column Totals: 123(A)   | 431 (B)      |
|  |                     |                      |                     | Prevalence Index = B/A =3.5   |              |
|  |                     |                      |                     | <b>Hydrophytic Vegetation Indicators:</b>   |              |
|  |                     |                      |                     | <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation  |              |
|  |                     |                      |                     | <input type="checkbox"/> Dominance Test is >50%   |              |
|  |                     |                      |                     | <input type="checkbox"/> Prevalence Index is ≤3.01  |              |
|  |                     |                      |                     | <input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) |              |
|  |                     |                      |                     | <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |              |
|  |                     |                      |                     | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.              |              |
|  |                     |                      |                     | <b>Definitions of Vegetation Strata:</b>  |              |
|  |                     |                      |                     | <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.                 |              |
|  |                     |                      |                     | <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.                                |              |
|  |                     |                      |                     | <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.               |              |
|  |                     |                      |                     | <b>Woody vines</b> – All woody vines greater than 3.28 ft in height   |              |
|  |                     |                      |                     | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>                  |              |
| <b>Sapling/Shrub Stratum (Plot size:15 ft)</b> |                     |                      |                     |   |              |
| 1.   |                     |                      |                     |   |              |
| 2.   |                     |                      |                     |   |              |
| 3.   |                     |                      |                     |   |              |
| 4.   |                     |                      |                     |   |              |
| 5.   |                     |                      |                     |   |              |
| 6.   |                     |                      |                     |   |              |
| 7.   |                     |                      |                     |   |              |
| 8.   |                     |                      |                     |   |              |
|  |                     |                      |                     | = Total Cover   |              |
| <b>Herb Stratum (Plot size:5 ft)</b>           |                     |                      |                     |   |              |
| 1. Dactylis glomerata                          | 18                  | Y                    | FACU                |   |              |
| 2. Artemisia vulgaris                          | 3                   |                      | UPL                 |   |              |
| 3. Solidago rugosa                             | 8                   |                      | FAC                 |   |              |
| 4. Leucanthemum vulgare                        | 3                   |                      | UPL                 |   |              |
| 5. Trifolium pratense                          | 13                  |                      | FACU                |   |              |
| 6. Poa pratensis                               | 33                  | Y                    | FACU                |   |              |
| 7. Silene cucubalus                            | 3                   |                      | UPL                 |   |              |
| 8. Phragmites australis                        | 23                  | Y                    | FACW                |   |              |
| 9. Lythrum salicaria                           | 8                   |                      | OBL                 |   |              |
| 10. Lespedeza hirta                            | 8                   |                      | UPL                 |   |              |
| 11. Plantago major                             | 3                   |                      | FACU                |   |              |
| 12.  |                     |                      |                     |   |              |
|  |                     |                      |                     | 123 = Total Cover   |              |
| <b>Woody Vine Stratum (Plot size:30 ft)</b>    |                     |                      |                     |   |              |
| 1.   |                     |                      |                     |   |              |
| 2.   |                     |                      |                     |   |              |
| 3.   |                     |                      |                     |   |              |
| 4.   |                     |                      |                     |   |              |
|  |                     |                      |                     | = Total Cover   |              |

Remarks: (Include photo numbers here or on a separate sheet.)

Photo #6

## SOIL

Sampling Point: UP3-P2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks            |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|--------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |                    |
| 0-4               | 10YR 3/2      | 100 |                |   |                   |                  | FSL     | Extremely Gravelly |
| 4-16              | 10YR 3/3      | 100 |                |   |                   |                  | FSL     | Refusal at 12-16"  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.<sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present? Yes ☐ No ☒

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

Project No. 604428-14

Project/Site: Silver Line City/County:Chelsea Sampling Date:6/4/2013

Applicant/Owner:MassDOT State:MA Sampling Point:UP4-P1

Investigator(s):SE Section, Township, Range:\_\_\_\_\_

Landform (hillslope, terrace, etc.):Flat Local relief (concave, convex, none):None

Slope (%):1-3 Lat:-71.025438 Long:42.391317 Datum:WGS84

Soil Map Unit Name:Urban Land/Udorthents NWI Classification:\_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

|  |   |   |
|--|---|---|
| Hydrophytic Vegetation Present?  | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Is the Sampled Area<br>within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/><br><br>If yes, optional Wetland Site ID: _____ |
| Hydric Soil Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |
| Wetland Hydrology Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |   |
| Remarks: (explain alternative procedures here or in separate report)<br>Area is an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation. Boundaries demarcate extent of phragmites growth, however, all other vegetation present is FACU or drier. |   |   |

**HYDROLOGY**

| Wetland Hydrology Indicators:  |  | Secondary Indicators (minimum of two required)   |
|--|--|--|
| Primary Indicators (minimum of one is required; check all that apply)                                      |  |  |
| <input type="checkbox"/> Surface Water (A1)  | <input type="checkbox"/> Water-Stained Leaves (B9)                                 | <input type="checkbox"/> Surface Soil Cracks (B6)  |
| <input type="checkbox"/> High Water Table (A2)   | <input type="checkbox"/> Aquatic Fauna (B13)                                       | <input type="checkbox"/> Drainage Patterns (B10)   |
| <input type="checkbox"/> Saturation (A3)   | <input type="checkbox"/> Marl Deposits (B15)                                       | <input type="checkbox"/> Moss Trim Lines (B16)   |
| <input type="checkbox"/> Water Marks (B1)  | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                                | <input type="checkbox"/> Dry-Season Water Table (C2)   |
| <input type="checkbox"/> Sediment Deposits (B2)  | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)                | <input type="checkbox"/> Crayfish Burrows (C8)   |
| <input type="checkbox"/> Drift Deposits (B3)   | <input type="checkbox"/> Presence of Reduced Iron (C4)                             | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)                             |
| <input type="checkbox"/> Algal Mat or Crust (B4)   | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)                | <input type="checkbox"/> Stunted or Stressed Plants (D1)                                       |
| <input type="checkbox"/> Iron Deposits (B5)  | <input type="checkbox"/> Thin Muck Surface (C7)                                    | <input type="checkbox"/> Geomorphic Position (D2)  |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)   | <input type="checkbox"/> Other (Explain in Remarks)                                | <input type="checkbox"/> Shallow Aquitard (D3)   |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |  | <input type="checkbox"/> Microtopographic Relief (D4)  |
|  |  | <input type="checkbox"/> FAC-Neutral Test (D5)   |
| <b>Field Observations:</b>   |  |  |
| Surface Water Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches) | Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| Water Table Present?   | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches) |  |
| Saturation Present?  | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches) |  |
| (include capillary fringe)   |  |  |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: |  |  |
| Remarks:   |  |  |



## VEGETATION – Use scientific names of plants

Sampling Point: UP4-P1

| <u>Tree Stratum</u> (Plot size:30 ft)          | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)<br>Total Number of Dominant Species Across All Strata: 3 (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (C)<br><b>Prevalence Index worksheet:</b><br><table border="0"> <tr> <td><u>Total % Cover of:</u></td> <td><u>Multiply by:</u></td> </tr> <tr> <td>OBL species 0</td> <td>x 1 = 0</td> </tr> <tr> <td>FACW species 28</td> <td>x 2 = 56</td> </tr> <tr> <td>FAC species 0</td> <td>x 3 = 0</td> </tr> <tr> <td>FACU species 80</td> <td>x 4 = 320</td> </tr> <tr> <td>UPL species 39</td> <td>x 5 = 195</td> </tr> <tr> <td>Column Totals: 144(A)</td> <td>559 (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A =3.9</td> </tr> </table> | <u>Total % Cover of:</u> | <u>Multiply by:</u> | OBL species 0 | x 1 = 0 | FACW species 28 | x 2 = 56 | FAC species 0 | x 3 = 0 | FACU species 80 | x 4 = 320 | UPL species 39 | x 5 = 195 | Column Totals: 144(A) | 559 (B) | Prevalence Index = B/A =3.9 |  |
|--|-------------------------|--------------------------|-------------------------|---|--------------------------|---------------------|---------------|---------|-----------------|----------|---------------|---------|-----------------|-----------|----------------|-----------|-----------------------|---------|-----------------------------|--|
| <u>Total % Cover of:</u>                       | <u>Multiply by:</u>     |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| OBL species 0                                  | x 1 = 0                 |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| FACW species 28                                | x 2 = 56                |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| FAC species 0                                  | x 3 = 0                 |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| FACU species 80                                | x 4 = 320               |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| UPL species 39                                 | x 5 = 195               |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| Column Totals: 144(A)                          | 559 (B)                 |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| Prevalence Index = B/A =3.9                    |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 1.   |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.01<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 2.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 3.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 4.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 5.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 6.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 7.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| = Total Cover                                  |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height<br><b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| <u>Sapling/Shrub Stratum</u> (Plot size:15 ft) |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 1.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 2.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 3.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 4.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 5.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 6.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 7.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 8.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| = Total Cover                                  |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| <u>Herb Stratum</u> (Plot size:5 ft)           |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 1. Dactylis glomerata                          | 23                      | Y                        | FACU                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 2. Artemisia vulgaris                          | 18                      |                          | UPL                     |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 3. Plantago major                              | 3                       |                          | FACU                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 4. Leucanthemum vulgare                        | 13                      |                          | UPL                     |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 5. Trifolium pratense                          | 33                      | Y                        | FACU                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 6. Poa pratensis                               | 18                      |                          | FACU                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 7. Phragmites australis                        | 28                      | Y                        | FACW                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 8. Coronilla varia                             | 8                       |                          | UPL                     |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 9. Parthenocissus quinquefolia                 | 3                       |                          | FACU                    |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 10.  |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 11.  |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 12.  |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 147 = Total Cover                              |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| <u>Woody Vine Stratum</u> (Plot size:30 ft)    |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 1.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 2.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 3.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| 4.   |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |
| = Total Cover                                  |                         |                          |                         |   |                          |                     |               |         |                 |          |               |         |                 |           |                |           |                       |         |                             |  |

Remarks: (Include photo numbers here or on a separate sheet.)

Photo #11

## SOIL

Sampling Point: UP4-P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks            |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|--------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |                    |
| 0-4               | 10YR 4/2      | 100 |                |   |                   |                  | FSL     | Extremely Gravelly |
| 4-16              | 2.5Y 5/4      | 100 |                |   |                   |                  | FSL     | Refusal at 12-16"  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain.<sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present? Yes ☐ No ☒

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

# Project No. 604428-14

Project/Site: Silver Line City/County: Chelsea Sampling Date: 6/4/2013

Applicant/Owner: MassDOT State: MA Sampling Point: UP5-P1

Investigator(s): SE Section, Township, Range: \_\_\_\_\_

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None

Slope (%): 1-3 Lat: -71.025378 Long: 42.391236 Datum: WGS84

Soil Map Unit Name: Urban Land/Udorthents NWI Classification: \_\_\_\_\_

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

Are Vegetation ☐ Soil ☒ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances present? Yes ☐ No ☒

Are Vegetation ☐, Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Hydric Soil Present? Yes ☐ No ☒

Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area

within a Wetland?

Yes ☐

No ☒

If yes, optional Wetland Site ID: \_\_\_\_\_

Remarks: (explain alternative procedures here or in separate report)

Area is an old rail bed with extremely gravelly and compacted disturbed soils and invasive vegetation. Boundaries demarcate extent of phragmites growth, however, all other vegetation present is FACU or drier.

## HYDROLOGY

### Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

☐ Surface Water (A1)

☐ High Water Table (A2)

☐ Saturation (A3)

☐ Water Marks (B1)

☐ Sediment Deposits (B2)

☐ Drift Deposits (B3)

☐ Algal Mat or Crust (B4)

☐ Iron Deposits (B5)

☐ Inundation Visible on Aerial Imagery (B7)

☐ Sparsely Vegetated Concave Surface (B8)

☐ Water-Stained Leaves (B9)

☐ Aquatic Fauna (B13)

☐ Marl Deposits (B15)

☐ Hydrogen Sulfide Odor (C1)

☐ Oxidized Rhizospheres on Living Roots (C3)

☐ Presence of Reduced Iron (C4)

☐ Recent Iron Reduction in Tilled Soils (C6)

☐ Thin Muck Surface (C7)

☐ Other (Explain in Remarks)

### Secondary Indicators (minimum of two required)

☐ Surface Soil Cracks (B6)

☐ Drainage Patterns (B10)

☐ Moss Trim Lines (B16)

☐ Dry-Season Water Table (C2)

☐ Crayfish Burrows (C8)

☐ Saturation Visible on Aerial Imagery (C9)

☐ Stunted or Stressed Plants (D1)

☐ Geomorphic Position (D2)

☐ Shallow Aquitard (D3)

☐ Microtopographic Relief (D4)

☐ FAC-Neutral Test (D5)

### Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches)

Water Table Present? Yes ☐ No ☒ Depth (inches)

Saturation Present? Yes ☐ No ☒ Depth (inches)

(include capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## VEGETATION – Use scientific names of plants

Sampling Point: UP5-P1

| <u>Tree Stratum</u> (Plot size:30 ft)          | <u>Absolute % Cover</u> | <u>Dominant Species?</u> | <u>Indicator Status</u> | <b>Dominance Test worksheet:</b><br>Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)<br>Total Number of Dominant Species Across All Strata: 3 (B)<br>Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (C)   |
|--|-------------------------|--------------------------|-------------------------|---|
| 1.<br>2.<br>3.<br>4.<br>5.<br>6.<br>7.         |                         |                          |                         |   |
| <u>Sapling/Shrub Stratum</u> (Plot size:15 ft) |                         |                          |                         | <b>Hydrophytic Vegetation Indicators:</b><br><input type="checkbox"/> Rapid Test for Hydrophytic Vegetation<br><input type="checkbox"/> Dominance Test is >50%<br><input type="checkbox"/> Prevalence Index is ≤3.01<br><input type="checkbox"/> Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)<br><input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)<br><sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 1.<br>2.<br>3.<br>4.<br>5.<br>6.<br>7.<br>8.   |                         |                          |                         | <b>Definitions of Vegetation Strata:</b><br><b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.<br><b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.<br><b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.<br><b>Woody vines</b> – All woody vines greater than 3.28 ft in height   |
| <u>Herb Stratum</u> (Plot size:5 ft)           |                         |                          |                         | <b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>  |
| 1. Dactylis glomerata                          | 28                      | Y                        | FACU                    |   |
| 2. Leucanthemum vulgare                        | 3                       |                          | UPL                     |   |
| 3. Plantago major                              | 3                       |                          | FACU                    |   |
| 4. Parthenocissus quinquefolia                 | 18                      | Y                        | FACU                    |   |
| 5. Trifolium pratense                          | 23                      | Y                        | FACU                    |   |
| 6. Poa pratensis                               | 13                      |                          | FACU                    |   |
| 7. Phragmites australis                        | 18                      |                          | FACW                    |   |
| 8. Phleum pratense                             | 13                      |                          | UPL                     |   |
| 9.<br>10.<br>11.<br>12.                        |                         |                          |                         |   |
|  | 147 = Total Cover       |                          |                         |   |
| <u>Woody Vine Stratum</u> (Plot size:30 ft)    |                         |                          |                         |   |
| 1.<br>2.<br>3.<br>4.                           |                         |                          |                         |   |
|  |                         |                          |                         |   |

Remarks: (Include photo numbers here or on a separate sheet.)

Photo #11

## SOIL

Sampling Point: UP5-P1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

| Depth<br>(inches) | Matrix        |     | Redox Features |   |                   |                  | Texture | Remarks            |
|-------------------|---------------|-----|----------------|---|-------------------|------------------|---------|--------------------|
|                   | Color (moist) | %   | Color (moist)  | % | Type <sup>1</sup> | Loc <sup>2</sup> |         |                    |
| 0-4               | 10YR 4/2      | 100 |                |   |                   |                  | FSL     | Extremely Gravelly |
| 4-16              | 2.5Y 5/4      | 100 |                |   |                   |                  | FSL     | Refusal at 12-16"  |

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grain. <sup>2</sup>Location: PL=Pore Lining M=Matrix

## Hydric Soil Indicators:

- |  |  |
|--|--|
| <input type="checkbox"/> Histosol (A1)                         | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2)                  | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B)       |
| <input type="checkbox"/> Black Histic (A3)                     | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L)             |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                 | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                        |
| <input type="checkbox"/> Stratified Layers (A5)                | <input type="checkbox"/> Depleted Matrix (F3)                            |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)     | <input type="checkbox"/> Redox Dark Surface (F6)                         |
| <input type="checkbox"/> Thick Dark Surface (A12)              | <input type="checkbox"/> Depleted Dark Surface (F7)                      |
| <input type="checkbox"/> Sandy Mucky Mineral (S1)              | <input type="checkbox"/> Redox Depressions (F8)                          |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)              |  |
| <input type="checkbox"/> Sandy Redox (S5)                      |  |
| <input type="checkbox"/> Stripped Matrix (S6)                  |  |
| <input type="checkbox"/> Dark Surface (S7) (LRR, R, MLRA 149B) |  |

Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |
|--|
| <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B)       |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)     |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)  |
| <input type="checkbox"/> Dark Surface (S7) (LRR K, L)                |
| <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L)     |
| <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L)           |
| <input type="checkbox"/> Iron-Manganese Masses (F12)                 |
| <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B)   |
| <input type="checkbox"/> Red Parent Material (TF2)                   |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12)            |
| <input type="checkbox"/> Other (Explain in Remarks)                  |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

## Restrictive Layer (if observed):

Type: \_\_\_\_\_

Depth (inches): 0

Hydric Soil Present? Yes ☐ No ☒

## Remarks:

Area is an old rail bed with extremely compacted and gravelly, disturbed soils.

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Applicant: Massachusetts Department of Transportation  |                  |                                    |  | Transect No. W1-UP1               |                 |                             |
|--|------------------|------------------------------------|--|-----------------------------------|-----------------|-----------------------------|
| Project location: Chelsea, Massachusetts   |                  |                                    |  | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS  |                  |                                    |  | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:  |                  |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only  |                  |                                    |  |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II  |                  |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)   |                  |                                    |  |                                   |                 |                             |
| <b>Section I. Vegetation</b>   |                  |                                    |  |                                   |                 |                             |
| Strata   | Plant Species    | Scientific Name                    | Percent Cover                                      | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| T  | Norway maple     | <i>Acer platanoides</i>            | 28   |                                   | Y               | UPL                         |
|  |                  |                                    |  |                                   |                 |                             |
| H  | Common plantain  | <i>Plantago major</i>              | 8  | 7.3%                              |                 | FACU                        |
| H  | Red clover       | <i>Trifolium pratense</i>          | 13   | 11.9%                             |                 | FACU                        |
| H  | Timothy grass    | <i>Phleum pratense</i>             | 18   | 16.5%                             | Y               | FACU                        |
| H  | Common mugwort   | <i>Artemisia vulgaris</i>          | 23   | 21.1%                             | Y               | UPL                         |
| H  | Oxeye daisy      | <i>Leucanthemum vulgare</i>        | 3  | 2.8%                              |                 | UPL                         |
| H  | Goldenrod        | <i>Solidago rugosa</i>             | 13   | 11.9%                             |                 | FAC                         |
| H  | Virginia creeper | <i>Parthenocissus quinquefolia</i> | 28   | 25.7%                             | Y               | FACU                        |
| H  | Common tansy     | <i>Tanacetum vulgare</i>           | 3  | 2.8%                              |                 | FACU                        |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
|  |                  |                                    |  |                                   |                 |                             |
| <small>* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.</small> |                  |                                    |  |                                   |                 |                             |
| <b>Vegetation Conclusion</b>   |                  |                                    |  |                                   |                 |                             |
| Number of dominant wetland indicator plants: 1   |                  |                                    | Number of dominant non-wetland indicator plants: 3 |                                   |                 |                             |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?   |                  |                                    |  |                                   |                 | No                          |
| Percent of dominant wetland plants vs. non-wetland plants:   |                  |                                    |  |                                   |                 | 25%                         |



**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| <b>Section II. Indicators of Hydrology</b>   |                |                              |  |   |                    |
|--|----------------|------------------------------|--|---|--------------------|
| <b>Soil Survey</b>   |                |                              |  |   |                    |
| Is there a published soil survey for this site?    Yes                                     |                |                              |  | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                    |
| Title/date:    Norfolk and Suffolk County, MA  |                |                              |  |   |                    |
| Map number:    USDA Web Soil Survey  |                |                              |  |   |                    |
| Soil type mapped:    Urban Land/Udorthents   |                |                              |  |   |                    |
| Hydric soil inclusions:    No  |                |                              |  |   |                    |
| Are field observations consistent with soil survey?    Yes                                 |                |                              |  |   |                    |
| <b>Soil Profile Description</b>  |                |                              |  |   |                    |
| Soil Horizon   | Depth - Inches | Color                        | Soil Texture                           | Soil Mottling   | Comments           |
| A  | 0-16           | 10YR 3/2                     | FSL                                    |   | Extremely Gravelly |
|  |                |                              |  |   | Refusal at 16"     |
|  |                |                              |  |   |                    |
|  |                |                              |  |   |                    |
| Remarks:   |                |                              |  |   |                    |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |                              |  |   |                    |
| <input type="checkbox"/> Site inundated:    No   |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |                              |  |   |                    |
| <input type="checkbox"/> Water marks:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drift lines:  |                |                              |  |   |                    |
| <input type="checkbox"/> Sediment deposits:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |                              |  |   |                    |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |                              |  |   |                    |
| <input type="checkbox"/> Water-stained leaves:   |                |                              |  |   |                    |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |                              |  |   |                    |
| X    Other:    Upland plot, no signs of hydrology observed                                 |                |                              |  |   |                    |
| <b>Vegetation and Hydrology Conclusion</b>   |                |                              |  |   |                    |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Hydric soil present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Other indicators of hydrology present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Sample location is in a BVW?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |

**Project No. 604428-14**

## DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

|   |                                   |
|---|-----------------------------------|
| Applicant: Massachusetts Department of Transportation | Transect No. W1-WP1               |
| Project location: Chelsea, Massachusetts              | DEP File No:                      |
| Prepared By: Scott Egan, CPSS                         | Date of Delineation: June 4, 2013 |

Check all that apply:

- ☐ Vegetation alone presumed adequate to delineate BVW: fill out Section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

## Section I. Vegetation

[illegible]

\* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

## Vegetation Conclusion

|  |   |  |   |
|--|---|--|---|
| Number of dominant wetland indicator plants: | 4 | Number of dominant non-wetland indicator plants: | 0 |
|--|---|--|---|

Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? Yes

Percent of dominant wetland plants vs. non-wetland plants: 100%

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |       |                                     |  |                                     |
|--|----------------|-------|-------------------------------------|--|-------------------------------------|
| <b>Soil Survey</b>   |                |       |                                     |  |                                     |
| Is there a published soil survey for this site?    Yes                                     |                |       |                                     | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. no actual soils are present in this plot location. Substrate consists of pure railbed gravel with pieces that are 2-4" across in size. |                                     |
| Title/date:    Norfolk and Suffolk County, MA  |                |       |                                     |  |                                     |
| Map number:    USDA Web Soil Survey  |                |       |                                     |  |                                     |
| Soil type mapped:    Urban Land/Udorthents   |                |       |                                     |  |                                     |
| Hydric soil inclusions:    No  |                |       |                                     |  |                                     |
| Are field observations consistent with soil survey?    Yes                                 |                |       |                                     |  |                                     |
| <b>Soil Profile Description</b>  |                |       |                                     |  |                                     |
| Soil Horizon   | Depth - Inches | Color | Soil Texture                        | Soil Mottling  | Comments                            |
|  |                |       |                                     |  | No soils present in rail bed        |
|  |                |       |                                     |  |                                     |
|  |                |       |                                     |  |                                     |
|  |                |       |                                     |  |                                     |
| Remarks:   |                |       |                                     |  |                                     |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |       |                                     |  |                                     |
| <input checked="" type="checkbox"/> Site inundated:    Surface water depth 6 inches        |                |       |                                     |  |                                     |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |       |                                     |  |                                     |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |       |                                     |  |                                     |
| <input type="checkbox"/> Water marks:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Drift lines:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Sediment deposits:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |       |                                     |  |                                     |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Water-stained leaves:   |                |       |                                     |  |                                     |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |       |                                     |  |                                     |
| Other:   |                |       |                                     |  |                                     |
| <b>Vegetation and Hydrology Conclusion</b>   |                |       |                                     |  |                                     |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |
| Hydric soil present?   |                | yes   | <input type="checkbox"/>            | no   | <input checked="" type="checkbox"/> |
| Other indicators of hydrology present?   |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |
| Sample location is in a BVW?   |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |

**Project No. 604428-14**

# DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|---|--|--------------------|--|--|--|--|--|--|--|---------------|--|-------------------|----------------------|-----------------|--|-----------------------------|--|--|--------------|--|--|--|--|--|--|--|--|
| Applicant:  |  |                    |  |  |  | Massachusetts Department of Transportation |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  | Transect No.                               |  |  |  |               |  |                   | W2-UP1               |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Project location:   |  |                    |  |  |  | Chelsea, Massachusetts                     |  |  |  |               |  |                   | DEP File No:         |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Prepared By:  |  |                    |  |  |  | Scott Egan, CPSS                           |  |  |  |               |  |                   | Date of Delineation: |                 |  |                             |  |  | June 4, 2013 |  |  |  |  |  |  |  |  |
| Check all that apply:   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only                                       |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)  |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Section I. Vegetation   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Strata  |  | Plant Species      |  |  |  | Scientific Name                            |  |  |  | Percent Cover |  | Percent Dominance |                      | Dominant Plant? |  | Wetland Indicator Category* |  |  |              |  |  |  |  |  |  |  |  |
| H   |  | Common plantain    |  |  |  | Plantago major                             |  |  |  | 8             |  | 10.7%             |                      |                 |  | FACU                        |  |  |              |  |  |  |  |  |  |  |  |
| H   |  | Red clover         |  |  |  | Trifolium pratense                         |  |  |  | 18            |  | 24.0%             |                      | Y               |  | FACU                        |  |  |              |  |  |  |  |  |  |  |  |
| H   |  | Hairy lespedeza    |  |  |  | Lespedeza hirta                            |  |  |  | 13            |  | 17.3%             |                      |                 |  | UPL                         |  |  |              |  |  |  |  |  |  |  |  |
| H   |  | Orchard grass      |  |  |  | Dactylis glomerata                         |  |  |  | 23            |  | 30.7%             |                      | Y               |  | FACU                        |  |  |              |  |  |  |  |  |  |  |  |
| H   |  | Kentucky bluegrass |  |  |  | Poa pratensis                              |  |  |  | 13            |  | 10.7%             |                      |                 |  | FACU                        |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
|   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Vegetation Conclusion   |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Number of dominant wetland indicator plants:  |  |                    |  |  |  |  |  |  |  |               |  |                   |                      | 0               |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Number of dominant non-wetland indicator plants:  |  |                    |  |  |  |  |  |  |  |               |  |                   |                      | 2               |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?      No                        |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |
| Percent of dominant wetland plants vs. non-wetland plants:      0%  |  |                    |  |  |  |  |  |  |  |               |  |                   |                      |                 |  |                             |  |  |              |  |  |  |  |  |  |  |  |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |       |                              |   |                    |
|--|----------------|-------|------------------------------|---|--------------------|
| <b>Soil Survey</b>   |                |       |                              |   |                    |
| Is there a published soil survey for this site?    Yes                                     |                |       |                              | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                    |
| Title/date:    Norfolk and Suffolk County, MA  |                |       |                              |   |                    |
| Map number:    USDA Web Soil Survey  |                |       |                              |   |                    |
| Soil type mapped:    Urban Land/Udorthents   |                |       |                              |   |                    |
| Hydric soil inclusions:    No  |                |       |                              |   |                    |
| Are field observations consistent with soil survey?    Yes                                 |                |       |                              |   |                    |
| <b>Soil Profile Description</b>  |                |       |                              |   |                    |
| Soil Horizon   | Depth - Inches | Color | Soil Texture                 | Soil Mottling   | Comments           |
| 0-12   | 10YR 4/3       |       | FSL                          |   | Extremely Gravelly |
|  |                |       |                              |   | Refusal at 10-12"  |
|  |                |       |                              |   |                    |
| Remarks:   |                |       |                              |   |                    |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |       |                              |   |                    |
| <input type="checkbox"/> Site inundated:    No   |                |       |                              |   |                    |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |       |                              |   |                    |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |       |                              |   |                    |
| <input type="checkbox"/> Water marks:  |                |       |                              |   |                    |
| <input type="checkbox"/> Drift lines:  |                |       |                              |   |                    |
| <input type="checkbox"/> Sediment deposits:  |                |       |                              |   |                    |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |       |                              |   |                    |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |       |                              |   |                    |
| <input type="checkbox"/> Water-stained leaves:   |                |       |                              |   |                    |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |       |                              |   |                    |
| Other:   |                |       |                              |   |                    |
| <b>Vegetation and Hydrology Conclusion</b>   |                |       |                              |   |                    |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                |       | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Hydric soil present?   |                |       | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Other indicators of hydrology present?   |                |       | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Sample location is in a BVW?   |                |       | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |

# DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

|   |                    |                             |  |                                   |                 |                             |
|---|--------------------|-----------------------------|--|-----------------------------------|-----------------|-----------------------------|
| Applicant: Massachusetts Department of Transportation   |                    |                             |  | Transect No. W2-WP1               |                 |                             |
| Project location: Chelsea, Massachusetts  |                    |                             |  | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS   |                    |                             |  | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:   |                    |                             |  |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only   |                    |                             |  |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II   |                    |                             |  |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)  |                    |                             |  |                                   |                 |                             |
| <b>Section I. Vegetation</b>  |                    |                             |  |                                   |                 |                             |
| Strata  | Plant Species      | Scientific Name             | Percent Cover                                      | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| H   | Phragmites         | <i>Phragmites australis</i> | 8  | 7.1%                              |                 | FACW                        |
| H   | Fox sedge          | <i>Carex vulpinoidea</i>    | 73   | 65.2%                             | Y               | OBL                         |
| H   | Purple loosestrife | <i>Lythrum salicaria</i>    | 23   | 20.5%                             | Y               | OBL                         |
| H   | Soft rush          | <i>Juncus effusus</i>       | 8  | 7.1%                              |                 | OBL                         |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
|   |                    |                             |  |                                   |                 |                             |
| * Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus <i>Sphagnum</i> ; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk. |                    |                             |  |                                   |                 |                             |
| <b>Vegetation Conclusion</b>  |                    |                             |  |                                   |                 |                             |
| Number of dominant wetland indicator plants: 2  |                    |                             | Number of dominant non-wetland indicator plants: 0 |                                   |                 |                             |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?  |                    |                             |  |                                   |                 | Yes                         |
| Percent of dominant wetland plants vs. non-wetland plants:  |                    |                             | 100%   |                                   |                 |                             |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |       |                                     |  |                                     |
|--|----------------|-------|-------------------------------------|--|-------------------------------------|
| <b>Soil Survey</b>   |                |       |                                     |  |                                     |
| Is there a published soil survey for this site?    Yes   |                |       |                                     | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. no actual soils are present in this plot location. Substrate consists of pure railbed gravel with pieces that are 2-4" across in size. |                                     |
| Title/date:    Norfolk and Suffolk County, MA  |                |       |                                     |  |                                     |
| Map number:    USDA Web Soil Survey  |                |       |                                     |  |                                     |
| Soil type mapped:    Urban Land/Udorthents   |                |       |                                     |  |                                     |
| Hydric soil inclusions:    No  |                |       |                                     |  |                                     |
| Are field observations consistent with soil survey?    Yes   |                |       |                                     |  |                                     |
| <b>Soil Profile Description</b>  |                |       |                                     |  |                                     |
| Soil Horizon   | Depth - Inches | Color | Soil Texture                        | Soil Mottling  | Comments                            |
| 0-6  | 10YR 2/1       |       | FSL                                 |  | Extremely Gravelly                  |
| 6-12   | 10YR 5/1       |       | SIL                                 | 10YR 4/6   | Extremely Gravelly                  |
|  |                |       |                                     |  |                                     |
|  |                |       |                                     |  |                                     |
| Remarks:   |                |       |                                     |  |                                     |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                                    |                |       |                                     |  |                                     |
| <input checked="" type="checkbox"/> Site inundated:    Surface water depth 6 inches                        |                |       |                                     |  |                                     |
| <input type="checkbox"/> Depth to free water in observation hole:  |                |       |                                     |  |                                     |
| <input checked="" type="checkbox"/> Depth to soil saturation in observation hole:    0 inches              |                |       |                                     |  |                                     |
| <input type="checkbox"/> Water marks:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Drift lines:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Sediment deposits:  |                |       |                                     |  |                                     |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |       |                                     |  |                                     |
| <input checked="" type="checkbox"/> Oxidized rhizospheres:    Depleted matrix, Redox dark surfaces visible |                |       |                                     |  |                                     |
| <input type="checkbox"/> Water-stained leaves:   |                |       |                                     |  |                                     |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other):                 |                |       |                                     |  |                                     |
| Other:   |                |       |                                     |  |                                     |
| <b>Vegetation and Hydrology Conclusion</b>   |                |       |                                     |  |                                     |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?                               |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |
| Hydric soil present?   |                | yes   | <input type="checkbox"/>            | no   | <input checked="" type="checkbox"/> |
| Other indicators of hydrology present?   |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |
| Sample location is in a BVW?   |                | yes   | <input checked="" type="checkbox"/> | no   | <input type="checkbox"/>            |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Applicant: Massachusetts Department of Transportation   |                    |                                    |               | Transect No. UP3-P1               |                 |                             |
|---|--------------------|------------------------------------|---------------|-----------------------------------|-----------------|-----------------------------|
| Project location: Chelsea, Massachusetts  |                    |                                    |               | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS   |                    |                                    |               | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:   |                    |                                    |               |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only                                       |                    |                                    |               |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II |                    |                                    |               |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)  |                    |                                    |               |                                   |                 |                             |
| <b>Section I. Vegetation</b>  |                    |                                    |               |                                   |                 |                             |
| Strata  | Plant Species      | Scientific Name                    | Percent Cover | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| S   | Black locust       | <i>Robinia pseudoacacia</i>        | 18            | 36.7                              | Y               | FACU                        |
| S   | Black raspberry    | <i>Rubus occidentalis</i>          | 26            | 53                                | Y               | UPL                         |
| S   | Multiflora rose    | <i>Rosa multiflora</i>             | 8             | 10.9                              |                 | FACU                        |
|   |                    |                                    |               |                                   |                 |                             |
| H   | Orchard grass      | <i>Dactylis glomerata</i>          | 8             | 9.3%                              |                 | FACU                        |
| H   | Common mugwort     | <i>Artemisia vulgaris</i>          | 13            | 15.1%                             | Y               | UPL                         |
| H   | Goldenrod          | <i>Solidago rugosa</i>             | 8             | 9.3%                              |                 | FAC                         |
| H   | Kentucky bluegrass | <i>Poa pratensis</i>               | 13            | 15.1%                             |                 | FACU                        |
| H   | Bladder campion    | <i>Silene cucubalus</i>            | 3             | 3.5%                              |                 | UPL                         |
| H   | Phragmites         | <i>Phragmites australis</i>        | 33            | 38.4%                             | Y               | FACW                        |
| H   | Virginia creeper   | <i>Parthenocissus quinquefolia</i> | 8             | 9.3%                              |                 | FACU                        |
|   |                    |                                    |               |                                   |                 |                             |
|   |                    |                                    |               |                                   |                 |                             |
|   |                    |                                    |               |                                   |                 |                             |
|   |                    |                                    |               |                                   |                 |                             |
|   |                    |                                    |               |                                   |                 |                             |

\* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus *Sphagnum*; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.

|   |  |
|---|--|
| <b>Vegetation Conclusion</b>  |  |
| Number of dominant wetland indicator plants: 1  | Number of dominant non-wetland indicator plants: 3 |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? No |  |
| Percent of dominant wetland plants vs. non-wetland plants: 33%  |  |



**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |                              |  |   |                    |
|--|----------------|------------------------------|--|---|--------------------|
| <b>Soil Survey</b>   |                |                              |  |   |                    |
| Is there a published soil survey for this site?    Yes                                     |                |                              |  | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                    |
| Title/date:    Norfolk and Suffolk County, MA  |                |                              |  |   |                    |
| Map number:    USDA Web Soil Survey  |                |                              |  |   |                    |
| Soil type mapped:    Urban Land/Udorthents   |                |                              |  |   |                    |
| Hydric soil inclusions:    No  |                |                              |  |   |                    |
| Are field observations consistent with soil survey?    Yes                                 |                |                              |  |   |                    |
| <b>Soil Profile Description</b>  |                |                              |  |   |                    |
| Soil Horizon   | Depth - Inches | Color                        | Soil Texture                           | Soil Mottling   | Comments           |
| A  | 0-4            | 10YR 3/2                     | FSL                                    |   | Extremely Gravelly |
| B  | 4-16           | 10YR 3/3                     | FSL                                    |   | Refusal at 12-16"  |
|  |                |                              |  |   |                    |
|  |                |                              |  |   |                    |
| Remarks:   |                |                              |  |   |                    |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |                              |  |   |                    |
| <input type="checkbox"/> Site inundated:    No   |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |                              |  |   |                    |
| <input type="checkbox"/> Water marks:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drift lines:  |                |                              |  |   |                    |
| <input type="checkbox"/> Sediment deposits:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |                              |  |   |                    |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |                              |  |   |                    |
| <input type="checkbox"/> Water-stained leaves:   |                |                              |  |   |                    |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |                              |  |   |                    |
| X    Other:    Upland plot, no signs of hydrology observed                                 |                |                              |  |   |                    |
| <b>Vegetation and Hydrology Conclusion</b>   |                |                              |  |   |                    |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Hydric soil present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Other indicators of hydrology present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Sample location is in a BVW?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Applicant: Massachusetts Department of Transportation  |                    |                             |  | Transect No. UP3-P2               |                 |                             |
|--|--------------------|-----------------------------|--|-----------------------------------|-----------------|-----------------------------|
| Project location: Chelsea, Massachusetts   |                    |                             |  | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS  |                    |                             |  | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:  |                    |                             |  |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only  |                    |                             |  |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II  |                    |                             |  |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)   |                    |                             |  |                                   |                 |                             |
| <b>Section I. Vegetation</b>   |                    |                             |  |                                   |                 |                             |
| Strata   | Plant Species      | Scientific Name             | Percent Cover                                      | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| H  | Orchard grass      | <i>Dactylis glomerata</i>   | 18   | 14.6%                             | Y               | FACU                        |
| H  | Common mugwort     | <i>Artemisia vulgaris</i>   | 3  | 2.4%                              |                 | UPL                         |
| H  | Goldenrod          | <i>Solidago rugosa</i>      | 8  | 6.5%                              |                 | FAC                         |
| H  | Oxeye daisy        | <i>Leucanthemum vulgare</i> | 3  | 2.4%                              |                 | UPL                         |
| H  | Red clover         | <i>Trifolium pratense</i>   | 13   | 10.6%                             | Y               | FACU                        |
| H  | Kentucky bluegrass | <i>Poa pratensis</i>        | 33   | 26.8%                             |                 | FACU                        |
| H  | Bladder campion    | <i>Silene cucubalus</i>     | 3  | 2.4%                              |                 | UPL                         |
| H  | Phragmites         | <i>Phragmites australis</i> | 23   | 18.7%                             | Y               | FACW                        |
| H  | Purple loosestrife | <i>Lythrum salicaria</i>    | 8  | 14.6%                             |                 | OBL                         |
| H  | Hairy lespedeza    | <i>Lespedeza hirta</i>      | 8  | 2.4%                              |                 | UPL                         |
| H  | Common plantain    | <i>Plantago major</i>       | 3  | 6.5%                              |                 | FACU                        |
|  |                    |                             |  |                                   |                 |                             |
|  |                    |                             |  |                                   |                 |                             |
|  |                    |                             |  |                                   |                 |                             |
|  |                    |                             |  |                                   |                 |                             |
|  |                    |                             |  |                                   |                 |                             |
| <small>* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.</small> |                    |                             |  |                                   |                 |                             |
| <b>Vegetation Conclusion</b>   |                    |                             |  |                                   |                 |                             |
| Number of dominant wetland indicator plants: 1   |                    |                             | Number of dominant non-wetland indicator plants: 2 |                                   |                 |                             |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?   |                    |                             |  |                                   |                 | No                          |
| Percent of dominant wetland plants vs. non-wetland plants:   |                    |                             |  |                                   |                 | 33%                         |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |                              |  |   |                    |
|--|----------------|------------------------------|--|---|--------------------|
| <b>Soil Survey</b>   |                |                              |  |   |                    |
| Is there a published soil survey for this site?    Yes                                     |                |                              |  | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                    |
| Title/date:    Norfolk and Suffolk County, MA  |                |                              |  |   |                    |
| Map number:    USDA Web Soil Survey  |                |                              |  |   |                    |
| Soil type mapped:    Urban Land/Udorthents   |                |                              |  |   |                    |
| Hydric soil inclusions:    No  |                |                              |  |   |                    |
| Are field observations consistent with soil survey?    Yes                                 |                |                              |  |   |                    |
| <b>Soil Profile Description</b>  |                |                              |  |   |                    |
| Soil Horizon   | Depth - Inches | Color                        | Soil Texture                           | Soil Mottling   | Comments           |
| A  | 0-4            | 10YR 3/2                     | FSL                                    |   | Extremely Gravelly |
| B  | 4-16           | 10YR 3/3                     | FSL                                    |   | Refusal at 12-16"  |
|  |                |                              |  |   |                    |
|  |                |                              |  |   |                    |
| Remarks:   |                |                              |  |   |                    |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |                              |  |   |                    |
| <input type="checkbox"/> Site inundated:    No   |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |                              |  |   |                    |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |                              |  |   |                    |
| <input type="checkbox"/> Water marks:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drift lines:  |                |                              |  |   |                    |
| <input type="checkbox"/> Sediment deposits:  |                |                              |  |   |                    |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |                              |  |   |                    |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |                              |  |   |                    |
| <input type="checkbox"/> Water-stained leaves:   |                |                              |  |   |                    |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |                              |  |   |                    |
| X    Other:    Upland plot, no signs of hydrology observed                                 |                |                              |  |   |                    |
| <b>Vegetation and Hydrology Conclusion</b>   |                |                              |  |   |                    |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Hydric soil present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Other indicators of hydrology present?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |
| Sample location is in a BVW?   |                | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/> |   |                    |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Applicant: Massachusetts Department of Transportation   |                    |                                    |  | Transect No. UP4-P1               |                 |                             |
|---|--------------------|------------------------------------|--|-----------------------------------|-----------------|-----------------------------|
| Project location: Chelsea, Massachusetts  |                    |                                    |  | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS   |                    |                                    |  | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:   |                    |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only   |                    |                                    |  |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II   |                    |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)  |                    |                                    |  |                                   |                 |                             |
| <b>Section I. Vegetation</b>  |                    |                                    |  |                                   |                 |                             |
| Strata  | Plant Species      | Scientific Name                    | Percent Cover                                      | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| H   | Orchard grass      | <i>Dactylis glomerata</i>          | 23   | 15.6%                             | Y               | FACU                        |
| H   | Common mugwort     | <i>Artemisia vulgaris</i>          | 18   | 12.2%                             |                 | UPL                         |
| H   | Common plantain    | <i>Plantago major</i>              | 3  | 2.0%                              |                 | FACU                        |
| H   | Oxeye daisy        | <i>Leucanthemum vulgare</i>        | 13   | 8.8%                              |                 | UPL                         |
| H   | Red clover         | <i>Trifolium pratense</i>          | 33   | 22.4%                             | Y               | FACU                        |
| H   | Kentucky bluegrass | <i>Poa pratensis</i>               | 18   | 12.2%                             |                 | FACU                        |
| H   | Phragmites         | <i>Phragmites australis</i>        | 28   | 19.0%                             | Y               | FACW                        |
| H   | Crownvetch         | <i>Coronilla varia</i>             | 8  | 5.4%                              |                 | UPL                         |
| H   | Virginia creeper   | <i>Parthenocissus quinquefolia</i> | 3  | 15.6%                             |                 | FACU                        |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
|   |                    |                                    |  |                                   |                 |                             |
| <small>* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus <i>Sphagnum</i>; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.</small> |                    |                                    |  |                                   |                 |                             |
| <b>Vegetation Conclusion</b>  |                    |                                    |  |                                   |                 |                             |
| Number of dominant wetland indicator plants: 1  |                    |                                    | Number of dominant non-wetland indicator plants: 2 |                                   |                 |                             |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?  |                    |                                    |  |                                   |                 | No                          |
| Percent of dominant wetland plants vs. non-wetland plants:  |                    |                                    |  |                                   |                 | 33%                         |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |          |                              |   |                    |
|--|----------------|----------|------------------------------|---|--------------------|
| <b>Soil Survey</b>   |                |          |                              |   |                    |
| Is there a published soil survey for this site?    Yes                                     |                |          |                              | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                    |
| Title/date:    Norfolk and Suffolk County, MA  |                |          |                              |   |                    |
| Map number:    USDA Web Soil Survey  |                |          |                              |   |                    |
| Soil type mapped:    Urban Land/Udorthents   |                |          |                              |   |                    |
| Hydric soil inclusions:    No  |                |          |                              |   |                    |
| Are field observations consistent with soil survey?    Yes                                 |                |          |                              |   |                    |
| <b>Soil Profile Description</b>  |                |          |                              |   |                    |
| Soil Horizon   | Depth - Inches | Color    | Soil Texture                 | Soil Mottling   | Comments           |
| A  | 0-4            | 10YR 4/2 | FSL                          |   | Extremely Gravelly |
| B  | 4-16           | 2.5Y 5/4 | FSL                          |   | Refusal at 12-16"  |
|  |                |          |                              |   |                    |
|  |                |          |                              |   |                    |
| Remarks:   |                |          |                              |   |                    |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |          |                              |   |                    |
| <input type="checkbox"/> Site inundated:    No   |                |          |                              |   |                    |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |          |                              |   |                    |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |          |                              |   |                    |
| <input type="checkbox"/> Water marks:  |                |          |                              |   |                    |
| <input type="checkbox"/> Drift lines:  |                |          |                              |   |                    |
| <input type="checkbox"/> Sediment deposits:  |                |          |                              |   |                    |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |          |                              |   |                    |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |          |                              |   |                    |
| <input type="checkbox"/> Water-stained leaves:   |                |          |                              |   |                    |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |          |                              |   |                    |
| X    Other:    Upland plot, no signs of hydrology observed                                 |                |          |                              |   |                    |
| <b>Vegetation and Hydrology Conclusion</b>   |                |          |                              |   |                    |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                |          | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Hydric soil present?   |                |          | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Other indicators of hydrology present?   |                |          | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |
| Sample location is in a BVW?   |                |          | yes <input type="checkbox"/> | no <input checked="" type="checkbox"/>  |                    |

**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Applicant: Massachusetts Department of Transportation  |                    |                                    |  | Transect No. UP5-P1               |                 |                             |
|--|--------------------|------------------------------------|--|-----------------------------------|-----------------|-----------------------------|
| Project location: Chelsea, Massachusetts   |                    |                                    |  | DEP File No:                      |                 |                             |
| Prepared By: Scott Egan, CPSS  |                    |                                    |  | Date of Delineation: June 4, 2013 |                 |                             |
| Check all that apply:  |                    |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Vegetation alone presumed adequate to delineate BVW: fill out Section I only  |                    |                                    |  |                                   |                 |                             |
| <input checked="" type="checkbox"/> Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II  |                    |                                    |  |                                   |                 |                             |
| <input type="checkbox"/> Method other than dominance test used (attach additional information)   |                    |                                    |  |                                   |                 |                             |
| <b>Section I. Vegetation</b>   |                    |                                    |  |                                   |                 |                             |
| Strata   | Plant Species      | Scientific Name                    | Percent Cover                                      | Percent Dominance                 | Dominant Plant? | Wetland Indicator Category* |
| H  | Orchard grass      | <i>Dactylis glomerata</i>          | 23   | 15.6%                             | Y               | FACU                        |
| H  | Oxeye daisy        | <i>Leucanthemum vulgare</i>        | 13   | 8.8%                              |                 | UPL                         |
| H  | Common plantain    | <i>Plantago major</i>              | 3  | 2.0%                              |                 | FACU                        |
| H  | Virginia creeper   | <i>Parthenocissus quinquefolia</i> | 3  | 2.0%                              |                 | FACU                        |
| H  | Red clover         | <i>Trifolium pratense</i>          | 33   | 22.4%                             | Y               | FACU                        |
| H  | Kentucky bluegrass | <i>Poa pratensis</i>               | 18   | 12.2%                             |                 | FACU                        |
| H  | Phragmites         | <i>Phragmites australis</i>        | 28   | 19.0%                             | Y               | FACW                        |
| H  | Timothy grass      | <i>Phleum pratense</i>             | 8  | 5.4%                              |                 | FACU                        |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
|  |                    |                                    |  |                                   |                 |                             |
| <small>* Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.</small> |                    |                                    |  |                                   |                 |                             |
| <b>Vegetation Conclusion</b>   |                    |                                    |  |                                   |                 |                             |
| Number of dominant wetland indicator plants: 1   |                    |                                    | Number of dominant non-wetland indicator plants: 2 |                                   |                 |                             |
| Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants?   |                    |                                    |  |                                   |                 | No                          |
| Percent of dominant wetland plants vs. non-wetland plants:   |                    |                                    |  |                                   |                 | 33%                         |













**Project No. 604428-14**  
**DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form**

| Section II. Indicators of Hydrology  |                |          |                          |   |                                     |
|--|----------------|----------|--------------------------|---|-------------------------------------|
| <b>Soil Survey</b>   |                |          |                          |   |                                     |
| Is there a published soil survey for this site?    Yes                                     |                |          |                          | Location of Plot:<br>Abandoned Railroad Right of Way, with extremely compacted and gravelly, disturbed soils. |                                     |
| Title/date:    Norfolk and Suffolk County, MA  |                |          |                          |   |                                     |
| Map number:    USDA Web Soil Survey  |                |          |                          |   |                                     |
| Soil type mapped:    Urban Land/Udorthents   |                |          |                          |   |                                     |
| Hydric soil inclusions:    No  |                |          |                          |   |                                     |
| Are field observations consistent with soil survey?    Yes                                 |                |          |                          |   |                                     |
| <b>Soil Profile Description</b>  |                |          |                          |   |                                     |
| Soil Horizon   | Depth - Inches | Color    | Soil Texture             | Soil Mottling   | Comments                            |
| A  | 0-4            | 10YR 4/2 | FSL                      |   | Extremely Gravelly                  |
| B  | 4-16           | 2.5Y 5/4 | FSL                      |   | Refusal at 12-16"                   |
|  |                |          |                          |   |                                     |
|  |                |          |                          |   |                                     |
| Remarks:   |                |          |                          |   |                                     |
| <b>Other Indicators of Hydrology: check all that apply and describe</b>                    |                |          |                          |   |                                     |
| <input type="checkbox"/> Site inundated:    No   |                |          |                          |   |                                     |
| <input type="checkbox"/> Depth to free water in observation hole:                          |                |          |                          |   |                                     |
| <input type="checkbox"/> Depth to soil saturation in observation hole:                     |                |          |                          |   |                                     |
| <input type="checkbox"/> Water marks:  |                |          |                          |   |                                     |
| <input type="checkbox"/> Drift lines:  |                |          |                          |   |                                     |
| <input type="checkbox"/> Sediment deposits:  |                |          |                          |   |                                     |
| <input type="checkbox"/> Drainage patterns in BVW:   |                |          |                          |   |                                     |
| <input type="checkbox"/> Oxidized rhizospheres:  |                |          |                          |   |                                     |
| <input type="checkbox"/> Water-stained leaves:   |                |          |                          |   |                                     |
| <input type="checkbox"/> Recorded data (stream, lake or tidal gauge; aerial photo; other): |                |          |                          |   |                                     |
| X    Other:    Upland plot, no signs of hydrology observed                                 |                |          |                          |   |                                     |
| <b>Vegetation and Hydrology Conclusion</b>   |                |          |                          |   |                                     |
| Number of wetland indicator plants ≥ number of non-wetland indicator plants?               |                | yes      | <input type="checkbox"/> | no  | <input checked="" type="checkbox"/> |
| Hydric soil present?   |                | yes      | <input type="checkbox"/> | no  | <input checked="" type="checkbox"/> |
| Other indicators of hydrology present?   |                | yes      | <input type="checkbox"/> | no  | <input checked="" type="checkbox"/> |
| Sample location is in a BVW?   |                | yes      | <input type="checkbox"/> | no  | <input checked="" type="checkbox"/> |

**MASSDOT SILVER LINE GATEWAY PROJECT**  
**COTTAGE STREET & GROVE STREET**

**CHELSEA, MA**

Notes:














| File No: 60242256   |                                  | WETLAND FUNCTION – VALUE EVALUATION FORM |                 | Date: 11/15/13  |                     |
|---|----------------------------------|--|-----------------|---|---------------------|
| Wetland ID: Wetland 1<br>(W1-1 through W1-19 connect)                                 |                                  |  |                 | AECOM Personnel: SB/CG  |                     |
| Function/Value  |                                  | Capability<br>Y                          | Capability<br>N | Summary   | Principal<br>Yes/No |
|    | Groundwater Recharge/Discharge   |  | X               | There is a very dense and compact soil profile comprised of large rail bed ballast stones, located in a linear landscape that likely ponds water for some time; however, there are no public or private water supply areas in the vicinity. This area does possess measurable aquifer transmissivity properties.            | NO                  |
|    | Floodflow Alteration             |  | X               | This wetland is not associated with any FEMA Flood Zone designations or any low-relief land to provide for flood attenuation.   | NO                  |
|    | Fish and Shellfish Habitat       |  | X               | This degraded wetland does not contain the permanent surface water required to sustain a viable fish or shellfish population.   | NO                  |
|    | Sediment/Toxicant Retention      | X  |                 | This wetland is capable of this function with adjacent sources and prevalent impervious sources for runoff in the direction and a generous herbaceous community; however, the size of this wetland located in an urban setting limit the capacity to provide sediment toxicant retention functions.                         | NO                  |
|    | Nutrient Removal                 | X  |                 | This wetland is capable of this function with a prevalent herbaceous community that may be capable of nutrients metabolism and attenuation from runoff; however, limited as no adjacent sources of nutrients such as agricultural fields and/or large suburban lawns managed with herbicides and subsequent runoff.         | NO                  |
|    | Production Export                |  | X               | This wetland does not contain a prevalence of mast trees and fruit-bearing shrubs that provide for wildlife - any consumption from fruits of few invasive glossy buckthorn shrubs and few buffer zone apple trees is attenuated within the wetland system. This wetland does not contain any economically viable functions. | NO                  |
|   | Sediment/Shoreline Stabilization |  | X               | This wetland is not associated with a waterbodies or watercourses with large low-relief floodplain beach-like landforms capable of sediment/shoreline stabilization.  | NO                  |
|  | Wildlife Habitat                 | X  |                 | This wetland is capable of this function with a dense herbaceous community for small mammals, and observations of small mammals and common suburban bird species, as cover and foraging habitat; however, the lack of habitat structure, size, and fragmented nature this wetland system limits this function.              | NO                  |
|  | Recreation                       |  | X               | This wetland does not have any capacity as a recreational resource due to the level of disturbance, amount of large debris, and evidence as a homeless refuge in an urban landscape context.  | NO                  |
|  | Educational/Scientific Value     |  | X               | This wetland does not have any capacity as an educational or scientific resource due to the level of disturbance, amount of large debris, and evidence as a homeless refuge in an urban landscape context.  | NO                  |
|  | Uniqueness/Heritage              |  | X               | Saturated and/or seasonally flooded palustrine emergent wetlands are one of the most commonly encountered systems in the northeast region.  | NO                  |
|  | Visual Quality/Aesthetics        |  | X               | This wetland has no visual quality and is not an aesthetically pleasing system as a result of substantial garbage and debris in an urban setting.   | NO                  |
| ES  | Endangered Species Habitat       |  | X               | There are no federal- or state-listed rare, threatened, or endangered species associated with this wetland. There are no NHESP Priority Habitats or Estimated Habitats.   | NO                  |



**MASSDOT SILVER LINE GATEWAY PROJECT  
COTTAGE STREET & GROVE STREET**

**CHELSEA, MA**

Notes:

| File No: 60242256   |                                  | WETLAND FUNCTION – VALUE EVALUATION FORM |   | Date: 11/15/13      |
|---|----------------------------------|--|---|---------------------|
| Wetland ID: Wetland 2<br>(W2-1 through W2-11 connect)   |                                  | AECOM Personnel: SB/CG                   |   |                     |
|   | Function/Value                   | Capability<br>Y N                        | Summary   | Principal<br>Yes/No |
|              | Groundwater Recharge/Discharge   | X  | There is a very dense and compact soil profile comprised of large rail bed ballast stones, located in a linear landscape that likely ponds water for some time; however, there are no public or private water supply areas in the vicinity. This area does possess measurable aquifer transmissivity properties.            | NO                  |
|              | Floodflow Alteration             | X  | This wetland is not associated with any FEMA Flood Zone designations or any low-relief land to provide for flood attenuation.   | NO                  |
|              | Fish and Shellfish Habitat       | X  | This degraded wetland does not contain the permanent surface water required to sustain a viable fish or shellfish population.   | NO                  |
|              | Sediment/Toxicant Retention      | X  | This wetland is capable of this function with adjacent sources and prevalent impervious sources for runoff in the direction and a generous herbaceous community; however, the size of this wetland located in an urban setting limit the capacity to provide sediment toxicant retention functions.                         | NO                  |
|              | Nutrient Removal                 | X  | This wetland is capable of this function with a prevalent herbaceous community that may be capable of nutrients metabolism and attenuation from runoff; however, limited as no adjacent sources of nutrients such as agricultural fields and/or large suburban lawns managed with herbicides and subsequent runoff.         | NO                  |
|              | Production Export                | X  | This wetland does not contain a prevalence of mast trees and fruit-bearing shrubs that provide for wildlife - any consumption from fruits of few invasive glossy buckthorn shrubs and few buffer zone apple trees is attenuated within the wetland system. This wetland does not contain any economically viable functions. | NO                  |
|              | Sediment/Shoreline Stabilization | X  | This wetland is not associated with a waterbodies or watercourses with large low-relief floodplain beach-like landforms capable of sediment/shoreline stabilization.  | NO                  |
|             | Wildlife Habitat                 | X  | This wetland is capable of this function with a dense herbaceous community for small mammals, and observations of small mammals and common suburban bird species, as cover and foraging habitat; however, the lack of habitat structure, size, and fragmented nature this wetland system limits this function.              | NO                  |
|            | Recreation                       | X  | This wetland does not have any capacity as a recreational resource due to the level of disturbance, amount of large debris and evidence of a homeless refuge and urban landscape context.   | NO                  |
|            | Educational/Scientific Value     | X  | This wetland does not have any capacity as an educational or scientific resource due to the level of disturbance, amount of large debris and evidence of a homeless refuge and urban landscape context.   | NO                  |
|            | Uniqueness/Heritage              | X  | Saturated and/or seasonally flooded palustrine emergent wetlands are one of the most commonly encountered systems in the northeast region.  | NO                  |
|            | Visual Quality/Aesthetics        | X  | This wetland has no visual quality and is not an aesthetically pleasing system as a result of substantial garbage and debris in an urban setting.   | NO                  |
| <b>ES</b>  | Endangered Species Habitat       | X  | There are no federal- or state-listed rare, threatened, or endangered species associated with this wetland. There are no NHEPS Priority Habitats or Estimated Habitats.   | NO                  |

## **Appendix E**

### **Project Plans**

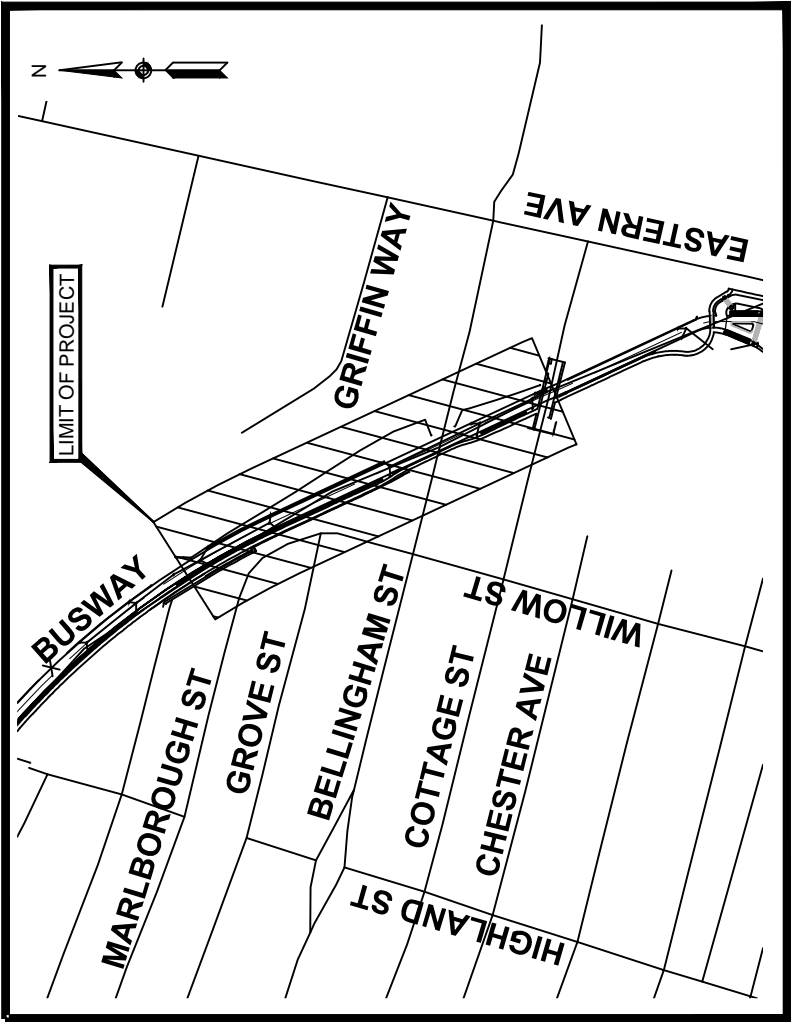
# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE OF  
SILVER LINE GATEWAY  
IN THE CITY OF  
CHELSEA  
SUFFOLK COUNTY

FEDERAL AID PROJECT NO.

## SECTION 401/404 PERMIT APPLICATION PLANS




















































| SHEET NO. | DESCRIPTION              |
|-----------|--------------------------|
| 1         | TITLE SHEET & INDEX      |
| 2         | LEGEND & GENERAL NOTES   |
| 3 - 5     | CONSTRUCTION DETAIL PLAN |
| 6 - 7     | EXISTING CONDITION PLAN  |
| 8 - 9     | PROPOSED SITE PLAN       |



DATE: FEBRUARY 2014

APPROXIMATE LENGTH OF PROJECT = 1.3 MILES

GENERAL SYMBOLS

| EXISTING  | PROPOSED  | DESCRIPTION   |
|---|---|---|
|    |   | JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER                |
|    |    | CATCH BASIN   |
|    |   | FLAG POLE   |
|    |   | GAS PUMP  |
|    |   | MAIL BOX  |
|    |   | POST SQUARE   |
|    |   | POST CIRCULAR   |
|    |   | WELL  |
|    |   | ELECTRIC HANDHOLE   |
|    |   | FENCE GATE POST   |
|    |   | GAS GATE  |
|    |   | BORING HOLE   |
|    |   | MONITORING WELL   |
|    |   | TEST PIT  |
|    |   | HYDRANT   |
|    |   | LIGHT POLE  |
|    |   | COUNTY BOUND  |
|    |   | GPS POINT   |
|    |    | CABLE MANHOLE   |
|    |   | DRAINAGE MANHOLE  |
|    |   | ELECTRIC MANHOLE  |
|   |   | GAS MANHOLE   |
|  |   | MISC MANHOLE  |
|  |   | SEWER MANHOLE   |
|  |   | TELEPHONE MANHOLE   |
|  |   | WATER MANHOLE   |
|  |   | MASSACHUSETTS HIGHWAY BOUND                               |
|  |   | MONUMENT  |
|  |   | STONE BOUND   |
|  |   | TOWN OR CITY BOUND  |
|  |   | TRAVERSE OR TRIANGULATION STATION                         |
|  |   | TROLLEY POLE OR GUY POLE                                  |
|  |   | TRANSMISSION POLE   |
|  |   | UTILITY POLE W/ FIREBOX                                   |
|  |   | UTILITY POLE WITH DOUBLE LIGHT                            |
|  |   | UTILITY POLE W / 1 LIGHT                                  |
|  |   | UTILITY POLE  |
|  |   | BUSH  |
|  |   | TREE  |
|  |   | STUMP   |
|  |   | SWAMP / MARSH   |
|  |  | WATER GATE  |
|  |  | PARKING METER   |
|  |   | OVERHEAD CABLE/WIRE                                       |
|  |   | CURBING   |
|  |   | CONTOURS  |
|  |  | UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)     |
|  |  | UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)  |
|  |  | UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)       |
|  |  | UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)     |
|  |  | UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER) |
|  |  | UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)     |
|  |   | BALANCE STONE WALL  |
|  |   | GUARD RAIL - STEEL POSTS                                  |
|  |   | GUARD RAIL - WOOD POSTS                                   |
|  |   | CHAIN LINK OR METAL FENCE                                 |
|  |   | WOOD FENCE  |
|  |   | HAY BALES/SILT FENCE                                      |
|  |   | TREE LINE OR LIMIT OF CLEARING AND GRUBBING               |
|  |   | SAWCUT LINE   |
|  |   | TOP OR BOTTOM OF SLOPE                                    |
|  |   | LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY       |
|  |   | BANK OF RIVER OR STREAM                                   |
|  |   | BORDER OF WETLAND   |
|  |   | 100 FT WETLAND BUFFER                                     |
|  |   | 200 FT RIVERFRONT BUFFER                                  |
|  |  | STATE HIGHWAY LAYOUT                                      |
|  |  | TOWN OR CITY LAYOUT                                       |
|  |  | COUNTY LAYOUT   |
|  |  | RAILROAD SIDELINE   |
|  |   | TOWN OR CITY BOUNDARY LINE                                |
|  |   | PROPERTY LINE OR APPROXIMATE PROPERTY LINE EASEMENT       |

GENERAL NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASEMAP ARE THE RESULT AN AERIAL MAPPING SURVEY PERFORMED BY THE SANBORN MAP COMPANY, INC. AS FLOWN ON SATURDAY SEPTEMBER 28, 2013 AND AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN OCTOBER 25 2013 AND JANUARY 9, 2014 BY GREEN INTERNATIONAL AFFILIATES, INC. PORTIONS OF WASHINGTON AVENUE WERE SURVEYED BY RICHARD F. KAMINSKI & ASSOCIATES, INC. IN MARCH OF 2006. GREEN INTERNATIONAL AFFILIATES, INC. HAS UPDATED THIS INFORMATION TO REFLECT RECONSTRUCTION ON WASHINGTON AVENUE NORTH OF THE RAILROAD CROSSING.
2. HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD83) ESTABLISHED BY GPS METHODS. VERTICAL DATUM IS NAVD88 ESTABLISHED BY GPS METHODS.
3. WETLANDS WERE DELINEATED BY AECOM IN OCTOBER 2013 IN ACCORDANCE WITH USACOE AND MASSDEP PROCEDURES AND FIELD LOCATED BY GREEN INTERNATIONAL AFFILIATES, INC ON NOVEMBER 5 & 6 2013.
4. THE RIGHT OF WAY LINES SHOWN ON THIS PLAN ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN INTERNATIONAL AFFILIATES, INC. WITH AN ERROR OF CLOSURE LESS THAN 1:10,000. AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES ARE FROM GIS INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.
5. THE CONTRACTOR SHALL INSTALL COMPOST FILTER TUBES AT THE BOTTOM OF SLOPE PRIOR TO START OF CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
6. DISTURBED UNPAVED SURFACES WITHIN THE PROJECT LIMITS SHALL BE TOPSOILED & SEEDED.
7. AREAS OUTSIDE THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.
8. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITY SERVICES TO ABUTTING PROPERTIES DURING CONSTRUCTION.

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

DATE: FEB. 2014

SCALE: N/A

AECOM



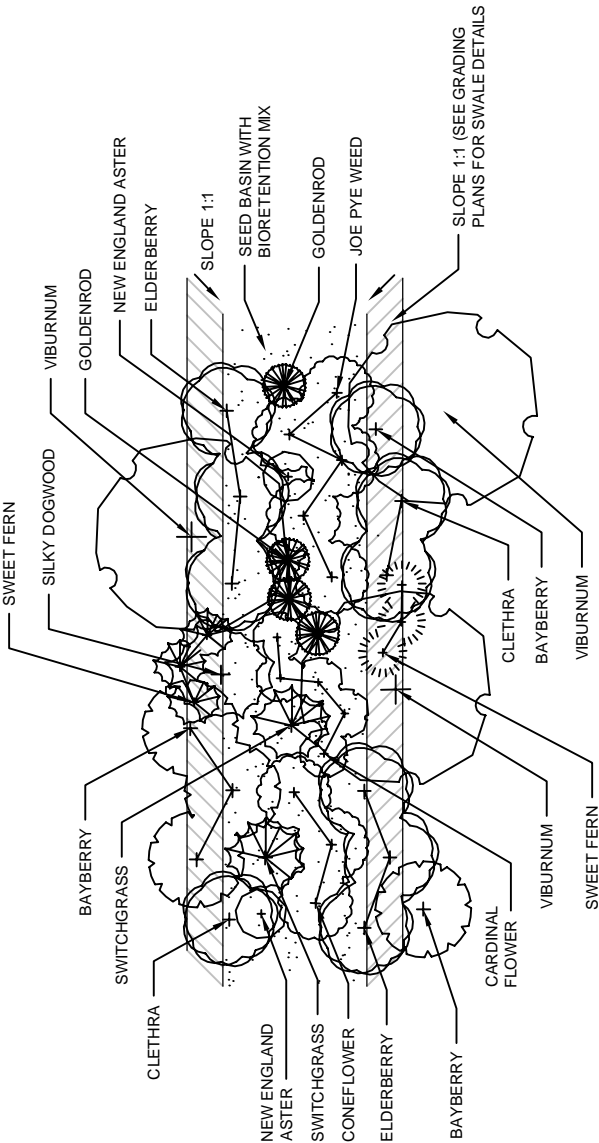
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY  
CHELSEA, MA  
SUFFOLK COUNTY

LEGEND & GENERAL NOTES

GN-1

SHEET 2 OF 9



TYPICAL PLANTING LAYOUT

NTS

PLANTING LIST: BIORETENTION BASIN

SHRUBS

| BOTANICAL NAME        | COMMON NAME       | HEIGHT/SPREAD | INSTALL SIZE | SPACING   |
|-----------------------|-------------------|---------------|--------------|-----------|
| CLETHRA ALNIFOLIA     | SWEET PEPPERBUSH  | 10 FT X 8 FT  | 2 - 3 FT     | 5 FT O.C. |
| CORNUS AMOMUM         | SILKY DOGWOOD     | 6 FT X 6 FT   | 18" - 24"    | 4 FT O.C. |
| MYRICA PENNSYLVANICA  | BAYBERRY          | 8 FT X 8 FT   | 2 - 3 FT     | 5 FT O.C. |
| SAMBUCUS CANADENSIS   | ELDERBERRY        | 10 FT X 10 FT | 2 - 3 FT     | 8 FT O.C. |
| VIRBURNUM CASSINOIDES | WITHEROD VIBURNUM | 8 FT X 8 FT   | 18" - 24"    | 5 FT O.C. |

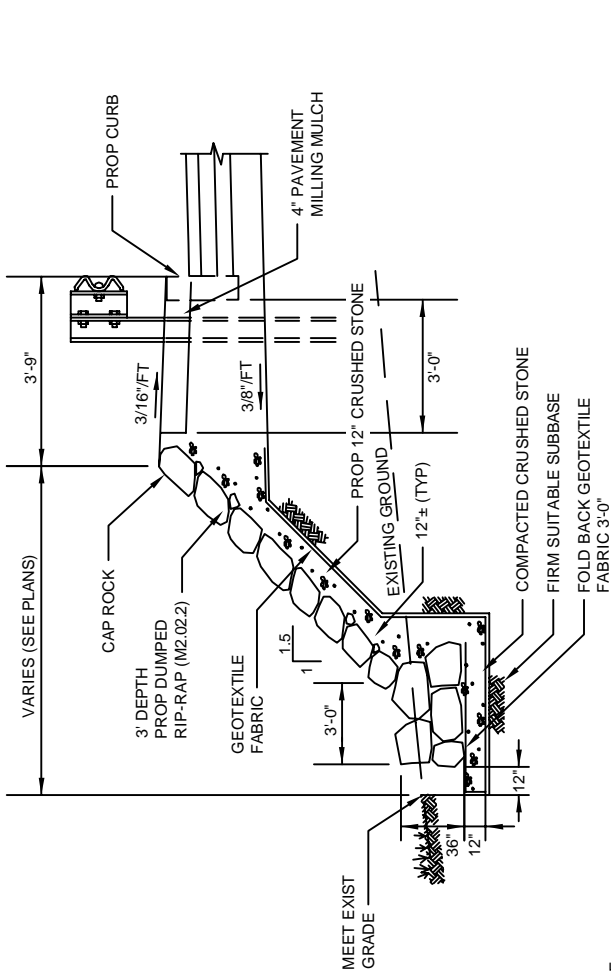
HERBACEOUS PLANTS

| BOTANICAL NAME        | COMMON NAME        | HEIGHT/SPREAD | INSTALL SIZE | SPACING    |
|-----------------------|--------------------|---------------|--------------|------------|
| ASCLEPIAS TUBEROSA    | BUTTERFLY MILKWEED | 24 IN X 24 IN | 2" PLUG      | 18 IN O.C. |
| ASTER NOVAE-ANGIAE    | NEW ENGLAND ASTER  | 4 FT X 3 FT   | 2" PLUG      | 2 FT O.C.  |
| COMPTONIA PEREGRINA   | SWEET FERN         | 3 FT X 5 FT   | 2" PLUG      | 3 FT O.C.  |
| EUPATORIUM PURPUREUM  | JOE PYE WEED       | 6 FT X 3 FT   | 2" PLUG      | 2 FT O.C.  |
| LOBELIA CARDINALIS    | CARDINAL FLOWER    | 3 FT X 2 FT   | 2" PLUG      | 2 FT O.C.  |
| PANICUM VIRGATUM      | SWITCHGRASS        | 6 FT X 3 FT   | 2" PLUG      | 3 FT O.C.  |
| RUDBECKIA LACINIATA   | CONEFLOWER         | 6 FT X 3 FT   | 2" PLUG      | 2 FT O.C.  |
| SOLIDAGO SEMPERVIRENS | GOLDENROD          | 4 FT X 3 FT   | 2" PLUG      | 2 FT O.C.  |

SEED MIX

SPREAD SEED THROUGHOUT LIMITS OF BIORETENTION BASIN(S)

|                      |                         |
|----------------------|-------------------------|
| 40% VIRGINIA WILDRYE | ULYMUS VIRGINICUS       |
| 29% FOX SEDGE        | CAREX VULPINOIDEA       |
| 10% LITTLE BLUESTEM  | SCHIZACHYRIUM SCOPARIUM |
| 10% SWITCHGRASS      | PANICUM VIRGATUM        |
| 5% AUTUMN BENTGRASS  | AGROSTIS PERENNANS      |
| 3% SOFT RUSH         | JUNCUS EFFUSUS          |
| 2% ROUGH BENTGRASS   | AGROSTIS SCABRA         |
| 1% PATH RUSH         | JUNCUS TENUIS           |

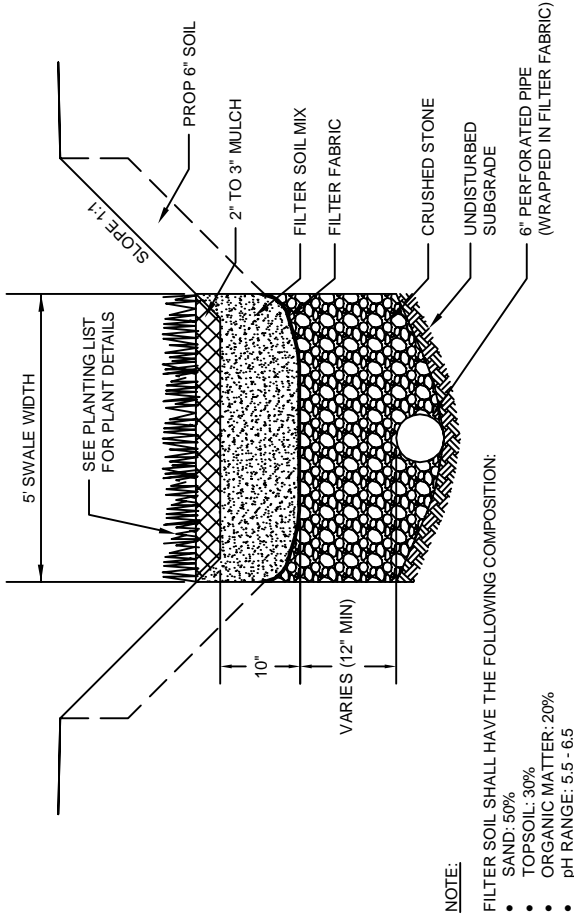


NOTE:

RIP-RAP SLOPE SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT DRAWING 2.4.1 OF THE BRIDGE MANUAL STANDARD SPECIFICATIONS ITEM 983. AND MATERIALS SHALL MEET THE REQUIREMENTS AS SPECIFIED IN SUBSECTION M2.02.2.

RIP-RAP SLOPE DETAIL

NTS



NOTE:

FILTER SOIL SHALL HAVE THE FOLLOWING COMPOSITION:

- SAND: 50%
- TOPSOIL: 30%
- ORGANIC MATTER: 20%
- pH RANGE: 5.5 - 6.5

VEGETATED SWALE

NTS

NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY  
CHELSEA, MA  
SUFFOLK COUNTY

CONSTRUCTION DETAIL PLAN 1

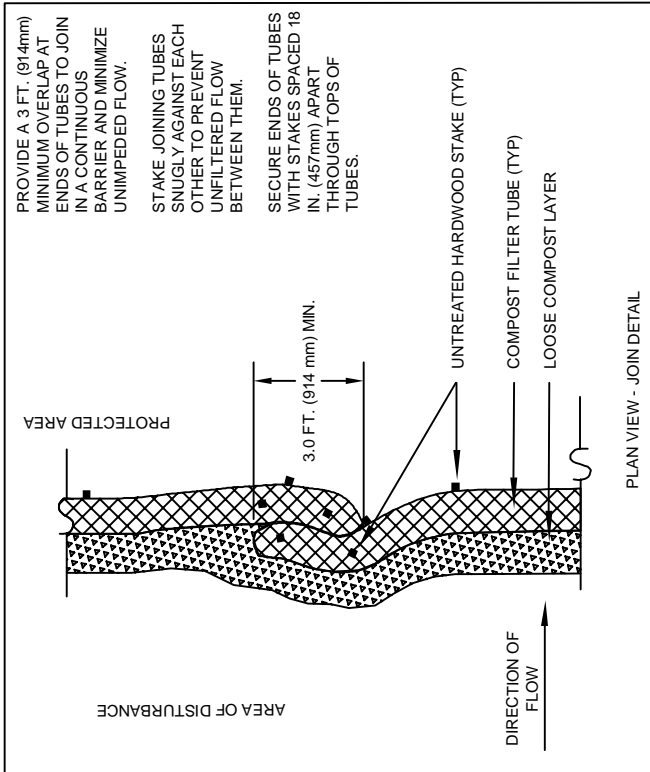
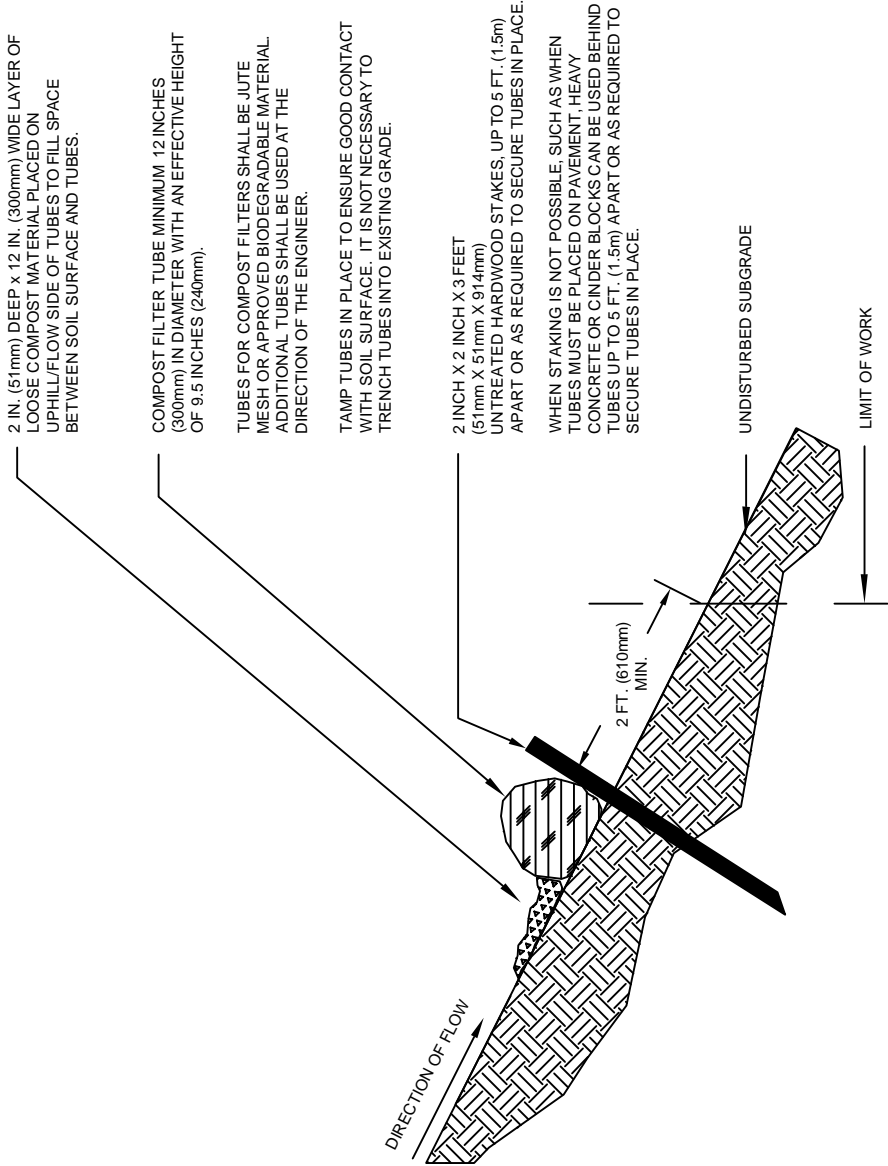
DATE: FEB. 2014

SCALE: NTS

DT-1

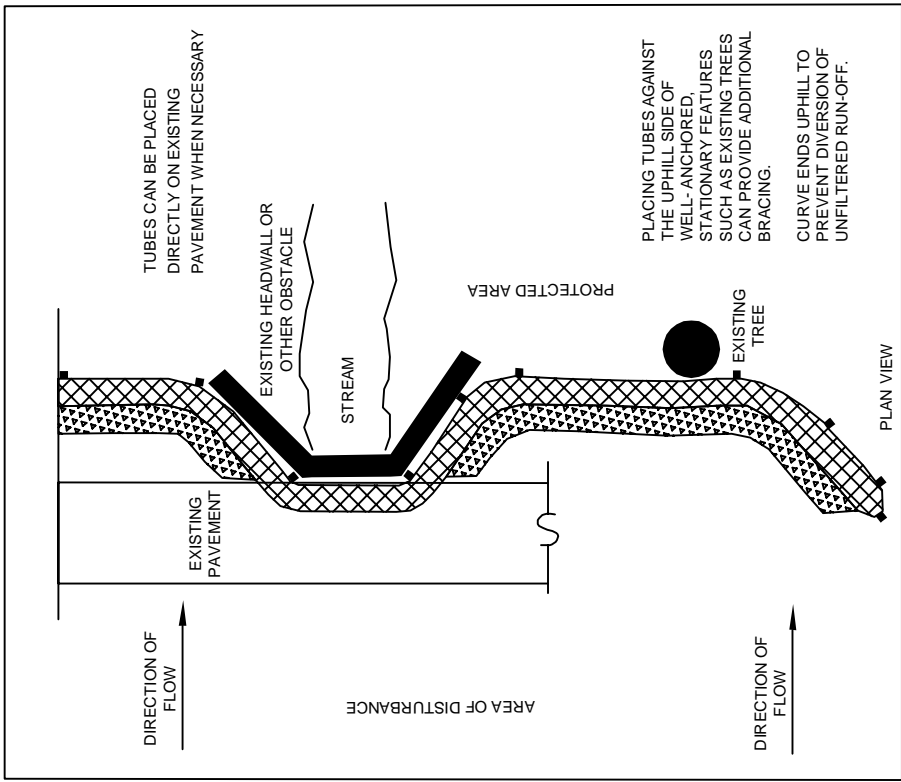
SHEET 3 OF 9

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824



NOTES:

1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.
- 4.

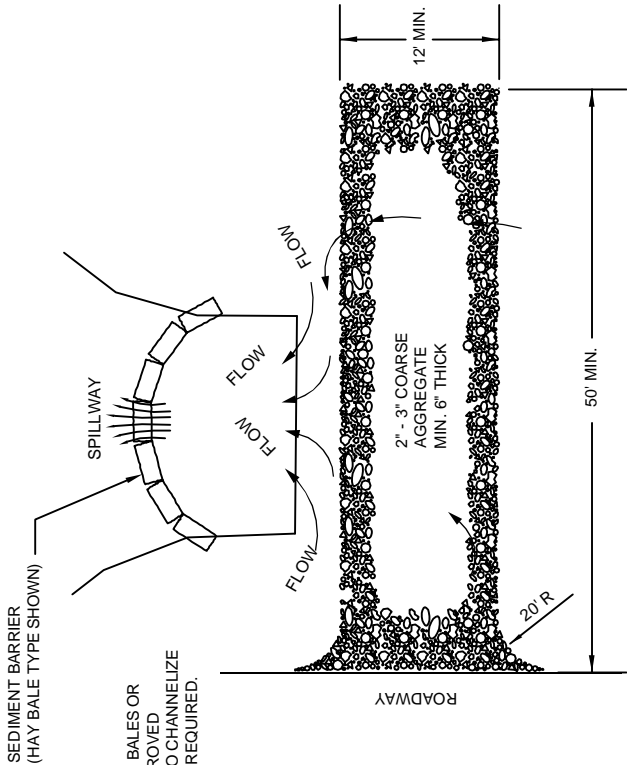


SINGLE COMPOST FILTER TUBE DETAIL

NTS

NOTE:

USE STRAW BALES OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF AS REQUIRED.

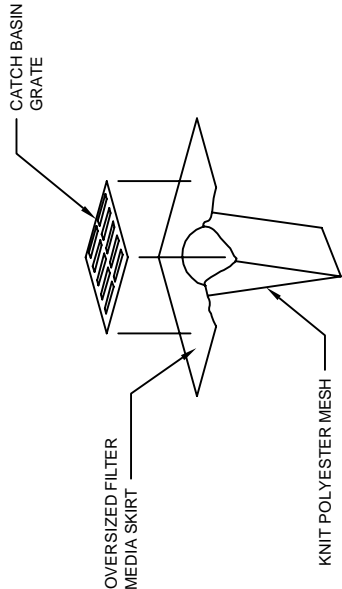


NOTE:

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT OUT OF THE CONSTRUCTION AREA. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

CATCH BASIN PROTECTION

NTS



NOT FOR CONSTRUCTION

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

SILVER LINE GATEWAY  
CHELSEA, MA  
SUFFOLK COUNTY

CONSTRUCTION DETAIL PLAN 2

DATE: FEB. 2014

SCALE: NTS

DT-2

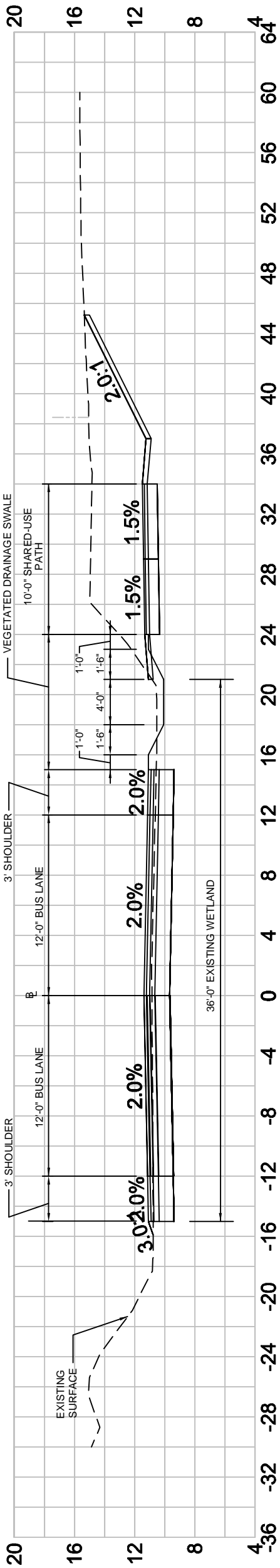
SHEET 4 OF 9

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT

NTS

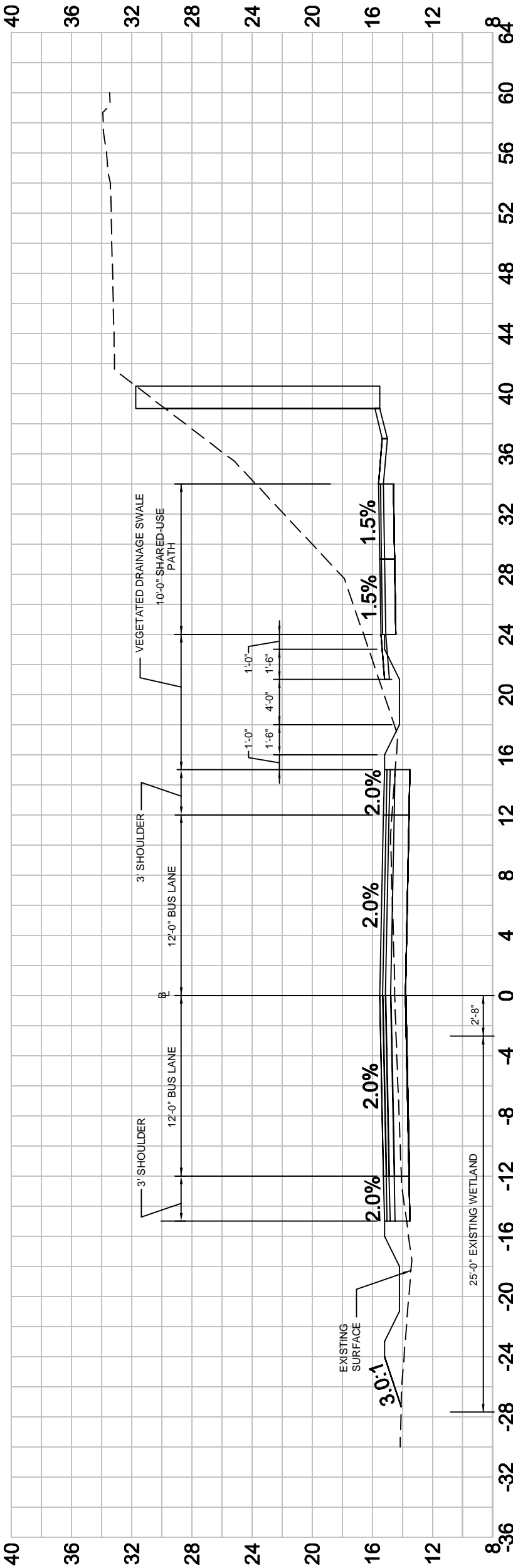


AECOM



CROSS SECTION VIEW OF WETLAND AREA #1

STA 75+50



CROSS SECTION VIEW OF WETLAND AREA #2

STA 69+50

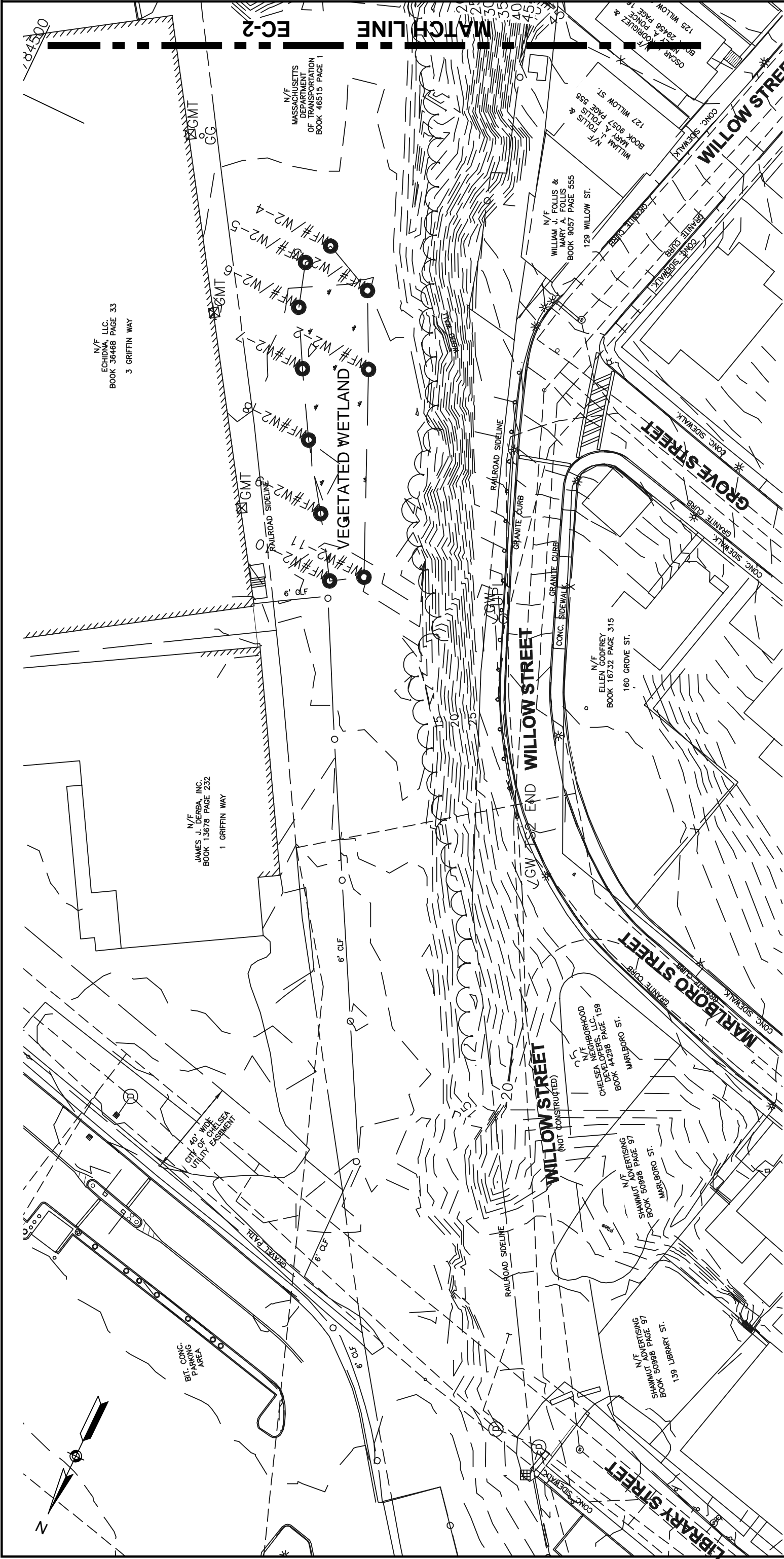
NOT FOR CONSTRUCTION



WILL PLOT TO SCALE ON 11"x17" FORMAT



|  |              |  |
|--|--------------|--|
| MASSACHUSETTS DEPARTMENT OF TRANSPORTATION           |              |  |
| SILVER LINE GATEWAY<br>CHELSEA, MA<br>SUFFOLK COUNTY |              |  |
| CONSTRUCTION DETAIL PLAN 2                           |              |  |
| DT-3   | SHEET 5 OF 9 |  |



NOT FOR CONSTRUCTION

|  |              |
|--|--------------|
| MASSACHUSETTS DEPARTMENT OF TRANSPORTATION           |              |
| SILVER LINE GATEWAY<br>CHELSEA, MA<br>SUFFOLK COUNTY |              |
| EXISTING CONDITIONS PLAN 1                           |              |
| EC-1   | SHEET 6 OF 9 |

|  |                 |
|--|-----------------|
| APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION<br>PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824 |                 |
| DATE: FEB. 2014  | SCALE: 1" = 40' |



SCALE IN FEET  
WILL PLOT TO SCALE ON 11"x17" FORMAT





# MATCH LINE

**NOT FOR CONSTRUCTION**

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

**SILVER LINE GATEWAY  
CHELSEA, MA  
SUFFOLK COUNTY**

## EXISTING CONDITIONS PLAN 2

EC-2

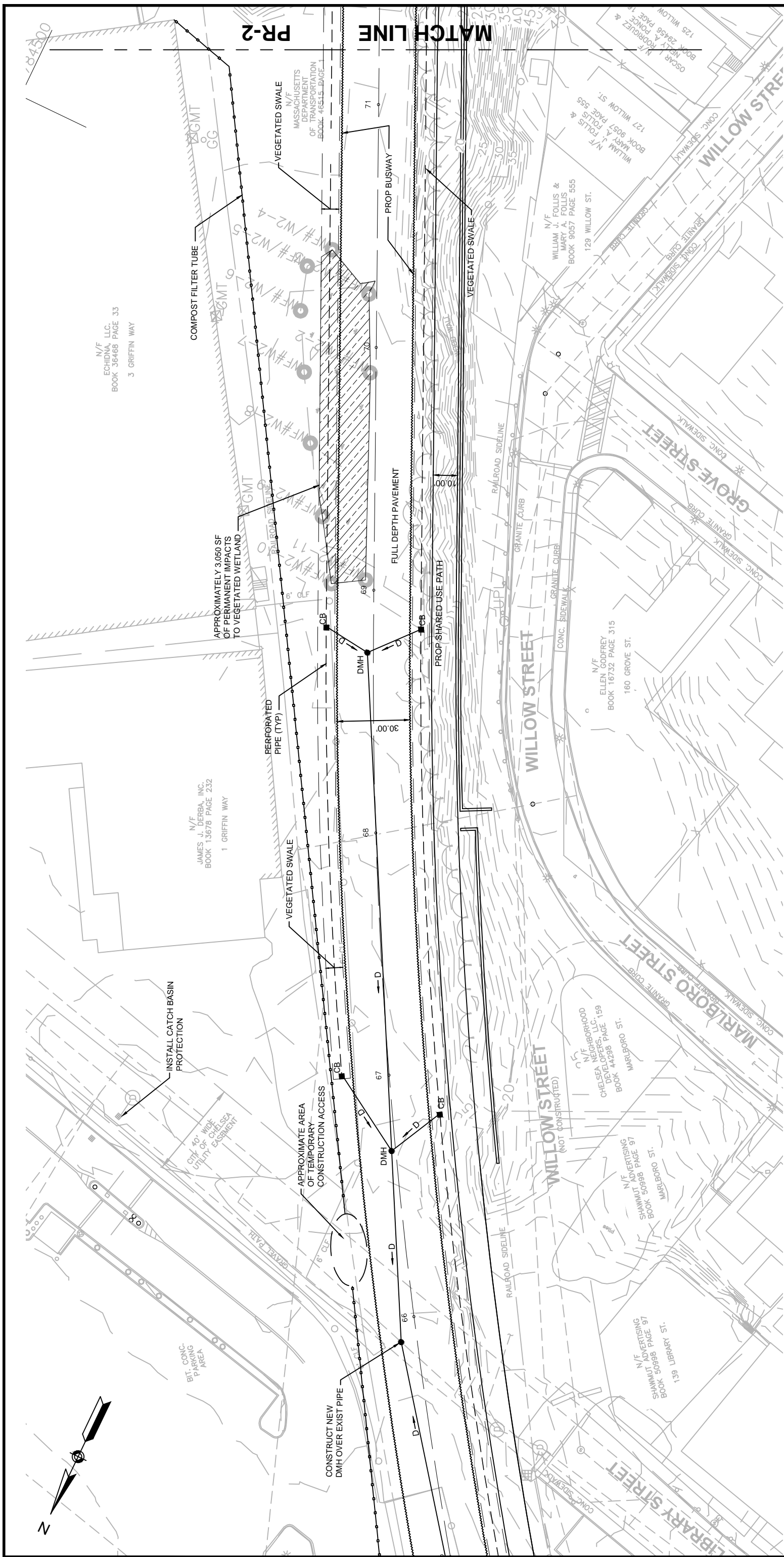
SCALE: 1" = 40'

DATE: FEB. 2014

**AECOM**



APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824



LEGEND:

## 13,798 SF PERMANENT IMPACTS TO VEGETATED WETLANDS



SCALE IN FEET

WILL PLOT TO SCALE ON 11"X17" FORMAT



AECOM

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

**SILVER LINE GATEWAY  
CHELSEA, MA  
SUFFOLK COUNTY**

# PROPOSED SITE PLAN 1

DATE: FEB. 2014

SCALE: 1" = 40'

PR-1 SHEET 8 OF 9



| Age Group | Total (%) | Male (%) | Female (%) | Unknown (%) |
|-----------|-----------|----------|------------|-------------|
| 0-14      | ~10       | ~5       | ~5         | ~80         |
| 15-24     | ~25       | ~15      | ~10        | ~75         |
| 25-34     | ~35       | ~20      | ~15        | ~65         |
| 35-44     | ~45       | ~25      | ~20        | ~55         |
| 45-54     | ~55       | ~30      | ~25        | ~45         |
| 55-64     | ~65       | ~35      | ~30        | ~35         |
| 65-74     | ~75       | ~40      | ~35        | ~25         |
| 75+       | ~85       | ~45      | ~40        | ~15         |

WILL PLOT TO SCALE ON 11"X17" FORMAT



MASSACHUSETTS DEPARTMENT OF TRANSPORTATION

APPLICATION BY: MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
PREPARED BY: AECOM, 250 APOLLO DRIVE, CHELMSFORD, MA 01824

DATE: FEB. 2014

SCALE: 1" = 40'

PR-2 SHEET 9 OF 9

## **Appendix F**

### **Invasive Species Management Plan**

## **INVASIVE PLANT PREVENTION PLAN**

### **DESCRIPTION**

The purpose of this item is to prevent the introduction and spread of invasive plant species into new areas and onto new sites through construction activities and, if introduced, to provide measures to eradicate or contain the species. Work includes submittal of a report that establishes a baseline inventory of existing invasive plant species on the site as specified below, identifies site construction procedures (including invasive plant controls if required) and sources of loam, compost, seed, and plant material, in order to prevent spread of existing on-site invasive plants or the introduction of additional invasive plants.

Prior to start of work the contractor shall walk the site with the Engineer and MassDOT Landscape Architect or other MassDOT representative familiar with invasive species identify and note locations of invasive species that are already present on site. Contractor shall submit a report noting species, locations and approximate area coverage to the Engineer as well as photo documentation.

The definition of invasive species shall be as defined by as “Invasive” or Early Detection Species” by the Massachusetts Invasive Plant Advisory Group (MIPAG). For reference see [www.mipag.net](http://www.mipag.net).

### **EXPERTISE**

Reports shall be prepared by specialist with expertise in invasive plant management, as specified herein.

### **SUBMITTALS**

The Contractor shall be responsible for making all submittals to the Engineer in a timely and complete manner. Submittals include the following items.

### **Qualifications:**

#### **Invasive Plant Control Contractor Qualification:**

1. Company must provide proof of qualifications by providing the following:
  - a. Narrative describing company, its expertise and experience with invasive plant control.
  - b. Describe how sensitive areas were managed.
  - c. Describe company’s technical qualifications and past performance.
2. Company must meet licensing requirements:
  - a. For any herbicide application, all crew applicators must have a Massachusetts Commercial Applicator License (CORE).
  - b. At least one or more applicator must have ROW certification if required for specific project.
  - c. Company must provide name(s) of applicator(s) and Applicator License/Certification number for all contractor crew leaders working on the project.
  - d. Company must provide documentation of any warnings, penalties or fines received in the last three (3) years.
3. Company must provide proof of experience with invasive plant control to include following:
  - a. At least five (5) references from prior invasive plant control work completed in last five (5) years. Provide contact information including address, phone number and email.
  - b. Provide a summary of each of these projects including nature of the problem, specific invasive vegetation treated, dates and period of treatment, methodologies used, and summary of success or not in terms of meeting performance objectives. Include summary of equipment used.
  - c. Photo documentation of these projects.

- d. GPS coordinates of project locations, if available.
4. Crew leader must have expertise with invasive plant control and provide the following:
- a. Have held Core license for at least five (5) years.
  - b. Resume listing five (5) or more years of experience applying pesticides with the company or five (5) years of previous experience with another company specializing in vegetation management.

Approved Contractors include the following or approved equal:

Groundscapes Express, Inc.  
P.O. Box 737  
Wrentham, MA 02093  
Contact: John Engwer  
Phone: 508-384-7140, FAX: 508-384-0571

Native Habitat Restoration  
P.O. Box 334  
Stockbridge, MA 01262  
Contact: Jess M. Toro : 413-358-7400  
Sari Hoy: 413-394-0277

New England Environmental, Inc.  
15 Research Drive  
Amherst, MA 01002  
Contact: Scott Fisher  
Phone: 413-256-0202, FAX: 413-256-1092

New England Wild Flower Society  
180 Hemenway Road  
Framingham, MA 01701  
Contact: Ted Elliman, Vegetation  
Management Coordinator  
508-877-7630 x 3203

Polatin Ecological Services, LLC  
Old Blake Farm  
334 Mountain Road  
Gill, MA 01351  
Contact: Chris Polatin  
Phone: 413-367-5292, Fax 732-474-9757

Vegetation Control Service, Inc.  
2342 Main St.  
Athol, MA 01331  
Contact: Jeff Taylor  
Phone: 800-323-7706

## MATERIALS

### Herbicides

For any application of herbicide, contractor shall submit in writing for the Engineer's approval, treatment method and quantities and types of herbicides to be used and the species for which they are intended. Engineer shall be notified prior to all herbicide applications. Herbicides shall be labeled for the method of treatment and shall meet regulation requirements. All herbicide used within riparian areas shall be approved for wetland areas and shall not contain surfactants.

Mixing, applying and/or disposing of herbicides shall always be in accordance with instructions on the labels. All applicators must wear the required personal protective equipment specified on the label.

All work shall conform to Mass Pesticide Laws and Regulations per the Department of Agricultural Resources Pesticide Bureau.

## METHOD

Following the initial site inspection, the contractor shall submit a report for approval that describes field measures to meet the following requirements:

### Construction Controls

- Minimized disturbance of invasive plants, including fencing off of populations that may be impacted or disturbed by construction activities
- Provide training and reference materials to assist construction workers in identification of targeted invasive plants
- Equipment cleaning procedures to prevent introduction of invasive plant seeds or propagules

### Prevention of introduction of invasive plant materials

- Identification all sources of soil, seed, mulch, nursery material, and any other material which may import invasive plant species. Note: if new soil brought onto the site is found to be infested with

seeds or fragments of invasive species, removal and replacement of soil may be required at no additional cost to the department.

Control of invasive plants found on site

- Provide written proposal for containment of invasive plants that will be disturbed by construction, particularly the following: Glossy Buckthorn (*Rhamnus frangula*), Tartarian Honeysuckle (*Lonicera tatarica*), Autumn Olive (*Elaeagnus umbellata*), Japanese Knotweed (*Polygonum cuspidatum*) and Common Reed (*Phragmites australis*).
- If containment or management requires herbicide treatment, provide materials information, methodology (including monitoring), and license of individual applying herbicide. Note: any plants treated with herbicide shall be monitored for re-emergence for the duration of the contract.

In addition, contractor shall submit proposal for approval of the methodology for treatment and removal of bittersweet in contained areas.

At the completion of the contract, the contractor shall submit a report for approval, documenting the presence of invasive plants as compared with the pre-construction condition, as well as sources of all organic materials introduced to the project including nursery material, seed, loam, mulch materials, and compost.

Contractor shall be responsible for control of introduced invasive plants for the duration of the contract, including the wetland replacement monitoring period, if applicable.

COMPENSATION

Compensation for this item shall be lump sum which shall be for all work required to: perform inspections, make recommendations, implement controls, monitor, complete and submit initial and final reports. Lump sum shall be made in two payments, 50 percent each, the first upon satisfactory completion of the first report and the second upon satisfactory completion of the final report and satisfactory inspection of the project area.